

Construction and Operation of a Proposed Cellulosic Ethanol
Biorefinery,
ZeaChem Boardman LLC
Morrow County, Oregon

Prepared by
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I. Proposal Description and Need

The United States Department of Agriculture, Rural Business Cooperative Service (RBS) is proposing to provide a Loan Note Guarantee to Silicon Valley Bank for ZeaChem Boardman Biorefinery LLC, (ZeaChem) to construct and operate a new cellulosic biorefinery in Boardman, Oregon. The biorefinery will have anticipated annual production reaching approximately 25 million gallons per year (25 MMgy) of cellulosic ethanol from the conversion of 225,000 bone dry tons (BDT) per year of cellulosic biomass (woody biomass and agricultural residues). The proposed location of the Biorefinery would be constructed on 25.22 acres within the Port of Morrow Industrial Park, located to the northeast of Boardman, OR (Figure 1).

The National Environmental Policy Act (NEPA) of 1969 requires federal agencies to integrate environmental values into their decision making processes by considering the environmental impacts of Proposed Actions. As a result, this proposal has been classified as requiring an Environmental Assessment (EA) in accordance with RBS's regulations of 7CFR 1940-Subpart G and NEPA 42 U.S.C. §4321. This EA evaluates the potential environmental impacts that could result from the proposed biorefinery.

The purpose of this action is to provide a loan guarantee to assist in the development and construction of a commercial-scale biorefinery for the development of advanced biofuels. The authority for such loan guarantees is Section 9003 of the Farm Security and Rural Investment Act of 2002 (FSRIA) (as amended by Section 9001 of the Food, Conservation, and Energy Act of 2008 (2008 Farm Bill)) which provides for the financing of commercial-scale biorefineries to produce advanced biofuels. Advanced biofuels are defined under The Energy Independence and Security Act of 2007 which established a national goal of renewable fuel standard production of some 36 billion gallons of renewable fuels by 2022. ZeaChem proposes to construct and operate a biorefinery to produce advanced biofuels to help meet that goal.

The Biorefinery proposes the production of 51 percent or more cellulosic ethanol or other biofuels by British Thermal Unit (BTU) content and 49 percent or less biproducts by BTU content using ZeaChem's patent protected technology. The biproducts that the facility may produce include lignin, acetic acid, and ethyl acetate. All utilities that may be associated with the proposal, wastewater, water, electric, and natural gas, are existing on the 25 acre site. One ethanol/biproduct supply pipeline would be installed along an existing road and railway right-of-way, from the Biorefinery to the existing liquid loading facility owned and operated by Tidewater Terminal Company, located approximately 2,400 feet away.

ZeaChem's technology uses a hybrid combination of biochemical core processing based on acetogenic fermentation and thermochemical processing to convert cellulosic materials into acids, esters and alcohols. The facility would consist of the following general areas:

- Feedstock Materials Handling Area

- Hydrolysis Unit – converts biomass into sugars and separates out lignin
- Fermentor – converts sugars into acids
- Acidification/Esterification – takes acids and concentrates them and converts them into esters
- Hydrogenolysis –converts esters into alcohols
- Associated Infrastructure (Utilities, Storage etc.)

Cellulosic biomass is an ideal choice for bio-refining because it grows abundantly throughout the world and replenishes quickly and easily in poor quality soil. The final product, cellulosic ethanol, would be piped directly to the Tidewater Terminal Company liquid loading facility, located approximately 2,400 feet away, where it would be shipped via barge to refineries for blending into gasoline and other products. The other biochemical products, lignin, acetic acid, and ethyl acetate would be sold and transported via barge, rail or truck to various markets.

A Biomass Crop Assistance Program (BCAP) award was issued to ZeaChem on July 26th, 2011. The BCAP award includes funding for a 7,000-acre hybrid poplar project within the GreenWood Tree Farm Fund's (GTFF's) 30,000 acre tree farm located in Boardman. The award is designed to service ZeaChem's cellulosic ethanol facility. The BCAP award will allow GTFF to enter into a contract with the USDA to receive up to 75 percent of the costs to establish up to 7,000 acres of intercropped hybrid poplar coppice trees and up to 15 years of annual maintenance payments for the crop (<http://www.ethanolproducer.com/articles/8025/bcap-project-targets-hybrid-poplar-for-zeachem>).

For purposes of this Environmental Assessment (EA) this proposal includes the construction of the biorefinery within the 25 acres of leased land located within the Port of Morrow Industrial Park within the East Beach Section, and related infrastructure, including onsite hook ups to water, wastewater, natural gas, and electricity, and the ethanol and biproducts supply pipeline. All access roads to the facility are either already existing or are considered to have independent utility from the proposal based on the fact that the biorefinery exists within an existing industrial park.

As indicated above, the Proposal's location was chosen for its proximity to the feedstock supply source, its location within an existing operating industrial park with full access to transportation corridors along the Columbia River, the availability of local laborers, and the availability of utilities and other consumables.

This proposal would impart overall environmental benefits related to its reduction in greenhouse gas emissions from a reduction in the burning of fossil fuels. The expected project lifespan is 20 years. Construction of the biorefinery is planned to begin in Fall/Winter of 2012/2013.

II. Primary Beneficiaries and Related Activities

The project would primarily benefit ZeaChem as the for-profit entity. The proposal's feedstock suppliers, Greenwood Resources Tree Farm Fund (G T F F) and local agricultural residue suppliers and their affiliated farms, would be secondary beneficiaries. ZeaChem has executed feedstock supply arrangements with G T F F for the supply of up to 70 percent of the feedstock requirements and local agricultural residue suppliers for the other 30 percent.

Additional Second-tier beneficiaries include engineering and design firms, construction companies, industrial service and supply companies, utilities, transporters as well as equipment manufacturers and suppliers.

An adjacent 250,000 gallon per year demonstration-scale ethanol biorefinery, owned by ZeaChem, received a \$25 million grant awarded by the U.S. Department of Energy (DOE) last year and is currently under construction on the adjacent 5-acre parcel in this leased portion of the Port of Morrow Industrial Park (Figure 2). The cellulosic ethanol portion of this demonstration plant is expected to become operational early in 2012. DOE reviewed this action as a categorical exclusion under their NEPA implementing regulations and it was determined not to have potential to have adverse effects to the environment (Appendix I). This smaller demonstration-scale facility will benefit from the BCAP award received by ZeaChem which is advantageous to both facilities.

Plans for future expansion at the Biorefinery were reviewed but determined that they are not reasonably foreseeable actions that should be included in our environmental assessment at this time. Future expansion possibilities include: 1) installation of an alcohol to ethylene process unit adjacent to the Biorefinery to process cellulosic ethanol from the Biorefinery into ethylene; 2) installation of an alcohol to hydrocarbon fuel process unit adjacent to the Biorefinery to process cellulosic ethanol from the Biorefinery into jet/diesel/gasoline fuel; and 3) expanding the existing facility to two times its proposed maximum cellulosic ethanol throughput capacity. Expanding the Biorefinery's capacity would require additional feedstock supply arrangements if pursued in the future.

III. Description of Proposal Area

The proposed site for the biorefinery is located within the Port of Morrow Enterprise Zone, Morrow County, OR near the town of Boardman, Oregon (Figure 2). The Port of Morrow, Oregon's second-largest port, is adjacent to the city and located on the Columbia Riverfront. The port property also includes two Portland General Electric (PGE) gas-fired power plants. PGE also has a coal-fired power plant in the Boardman area (Figure 3). The area is a nonmetropolitan area as recognized by Community Development Financial Institutions and a rural area as recognized by USDA. ZeaChem has executed an option to lease a 25.22-acre site with the Port of Morrow within their existing Industrial Park for the Biorefinery. The site is

located alongside ZeaChem's 250,000 gallon per year integrated demonstration plant which is currently under construction. The Pacific Ethanol plant is also located adjacent to the proposed site, within the East Beach Industrial Park. The site is zoned for heavy industrial use and is supported with industrial scale utilities including:

- Umatilla Electric Cooperative Power (electric)
- Port of Morrow (water and waste water)
- Cascade Natural Gas (gas)

The Port of Morrow (a municipal corporation of the State of Oregon) is Oregon's second largest port and hosts multiple commercial and industrial facilities with industrial levels of traffic anticipated. The site is serviced by barge load out docks on the Columbia River operated by Tidewater Terminal Company, existing rail loop facilities connected to the neighboring Union Pacific main line and existing Interstate Highway 84 interconnections.

The subject property is located in the SW ¼ of Section 2, Township 4 North, Range 25 East, Morrow County, Oregon. An approximate central property coordinate for the site is Latitude 45.854° N Longitude 119.6601° W. The subject property is located on undeveloped land approximately ¼-mile by paved road west from Columbia Avenue on Rail Loop Drive at address 71099 Rail Loop Drive, Boardman, OR 97818. Lewis and Clark Drive also enters the area westerly from Columbia Avenue and form a circular drive where it meets Rail Loop Drive through the north-westerly portion of the East Beach Industrial Park. Rail lines also loop through the area and in part enclose the subject property. The subject property is entirely surrounded by either the undeveloped parent parcel or developed industrial properties as shown in Figures 2 and 3.

Boardman (an incorporated city) is located in Morrow County, Oregon, between the Columbia River and Interstate 84. The principal industries in Morrow County include agriculture, food processing, lumber, livestock, and recreation. The Columbia River and the coal-fired generating plant located outside of Boardman also provide Morrow County with a number of related jobs.

The perimeter of the parent parcel is adjoined by the following and shown in Figure 4 Photographs:

To the North: Rail Loop Drive, ZeaChem 5-acre Demonstration Facility, and the Pacific Ethanol Bio- Fuels Facility.

To the South: Undeveloped Port Land, and Rail Line.

To the East: Undeveloped Land, Rail Line, Road, and Industrial Facilities.

To the West: Rail Line, Undeveloped Land, Cargill Corn Silo Facility, and the Columbia River.

The subject property and nearby surrounding parent parcel is being developed as the Port of Morrow East Beach Industrial Park which also uniquely provides port and docking moorage on the Columbia River.

The area is generally flat having a slight increase in elevation from west to east within the boundaries of the site. The subject property is presently devoid of structures whose perimeters are railroad track to the south, east and west and Rail Loop Drive to the north. An old concrete pad may be found in the north-western quadrant of the subject property which may have at one time hosted a small wood mill judging by a limited amount of wood chips and cuttings in the immediate area of the pad. Three abandoned water lines, fire hydrant and an abandoned dirt road are found at the extreme south end of the subject property while a 20 foot gas line easement adjoins to the site to the west. One active waste water manhole with buried 12-inch PVC pipe and one sanitary sewer manhole with pressure sewer are found in the north-eastern quadrant of the property.

All property directly adjoining the subject property continues to be vacant excepting for rail line, roads and underground utilities. The closest developed properties are the Cargill Pacific Grain silos and dock facility approximately 500-1000 feet to the West; the Pacific Ethanol Plant approximately 1,500 feet to the North-Northeast and the ZeaChem Demonstration Facility directly across Rail Loop Road to the North.

IV. Environmental Impact

1. Air Quality.

The federal Clean Air Act (CAA) required the USEPA to set National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment. NAAQS include two types of air quality standards. Primary standards protect the public, including the health of sensitive populations such as asthmatics, children, and the elderly. Secondary standards protect the public welfare, with respect to protection against decreased visibility, damage to animals, crops, vegetation, and buildings (USEPA 2010). USEPA has established NAAQS for six principal pollutants, which are called criteria pollutants. They include nitrogen oxides (NO_x, including nitrogen dioxide [NO₂]), carbon monoxide (CO), particulate matter (PM), sulfur dioxide (SO₂), ozone (O₃), and lead (Pb) (Table 1). Units of measure for the standards are parts per million (ppm) by volume, parts per billion (ppb - 1 part in 1,000,000,000) by volume, milligrams per cubic meter of air (mg/m³), and micrograms per cubic meter of air (µg/m³).

Table 1. National Ambient Air Quality Standards

Pollutant	Primary Standards		Secondary Standards	
	Level	Averaging Time	Level	Averaging Time
Carbon Monoxide (CO)	9 ppm (10 mg/m ³)	8-hour	None	
	35 ppm (40 mg/m ³)	1-hour		
Lead (Pb)	0.15 µg/m ³	Rolling 3-Month Average	Same as Primary	
	1.5 µg/m ³	Quarterly Average	Same as Primary	
Nitrogen Dioxide (NO ₂)	53 ppb	Annual (Arithmetic Average)	Same as Primary	
	100 ppb	1-hour	None	
Particulate Matter (PM ₁₀)	150 µg/m ³	24-hour	Same as Primary	
Particulate Matter (PM _{2.5})	15.0 µg/m ³	Annual (Arithmetic Average)	Same as Primary	
	35 µg/m ³	24-hour	Same as Primary	
Ozone (O ₃)	0.075 ppm (2008 std)	8-hour	Same as Primary	
	0.08 ppm (1997 std)	8-hour	Same as Primary	
	0.12 ppm	1-hour	Same as Primary	
Sulfur Dioxide (SO ₂)	0.03 ppm	Annual (Arithmetic Average)	0.5 ppm	3-hour
	0.14 ppm	24-hour		
	75 ppb	1-hour	None	

<http://www.epa.gov/air/criteria.html>

Areas that meet the air quality standards for the criteria pollutants are designated as being in attainment. Areas that do not meet the air quality standard for one or more of the criteria pollutants may be subject to the formal rule-making process and designated as being in nonattainment for that standard. The proposed project area is in attainment for all criteria air pollutants.

The estimated air emissions for the criteria pollutants for the proposed facility are presented in Table 2. PM_{2.5} has not been estimated, but it is likely very similar to PM emission level. PM, PM_{2.5} and PM₁₀ may also drop due to control devices during operations, especially in the cooling tower. All of the other criteria pollutants qualify for the State Air Contaminant Discharge Permit in that they are lower than the non-attainment thresholds for the 6 criteria air pollutants and other pollutants listed. All air emissions from the Facility would be authorized under an Oregon Department of Environmental Quality (ODEQ) Air Contaminant Discharge Permit (ACDP). Since the emission levels are below Major Source significance level, the project

itself does not trigger a federal Non-Attainment New Source Review and therefore would likely not be reviewed by USEPA.

Table 2: Facility Estimated Air Emissions

Pollutant	Annual Emissions Tons per year (Tpy)	ODEQ Threshold for Air Contaminant Discharge Permit (Tpy)
NOX	33.6	100
PM10	87.6	100
PM 2.5	Less than 87.6	100
SOx	0.46	100
CO	92.4	100
VOC	21.9	100
HAPs	3.7	100

In summary, the emission estimates for the facility are consistent with USEPA and ODEQ classification for an ACDP which will require that the Facility emissions are below the NAAQS levels (listed in Table 2 above).

The proposed facility emissions will not result in significant adverse environmental impacts to air quality because the proposed emissions from the facility are in keeping with ODEQ air quality permit requirements and as such are not expected to have significant adverse effects. Only a minor adverse effect is expected to result from the emissions of pollutants from the facility, since without the facility there would be no increase in emissions in the area.

On August 2, 2011 RBS Notified ODEQ of the proposal and its potential impact to historic resources and requested any known impact with respect to air or water resources as well as any known required Water Quality, Air Quality, or Solid Waste Permits.

Andy Ginsburg, Air Quality Administrator, and Neil Mullane, Water Quality Administrator, at the ODEQ commented via letter dated April 12, 2011 and email dated August 8, 2011 that ODEQ supports ZeaChem's proposal because the plant would produce low carbon fuels that would help Oregon meet their greenhouse gas reduction goals, diversify Oregon's transportation fuel supply and develop markets for Oregon's biomass resources (Appendix I). ODEQ indicated they have no comments on potential impacts at this time, but indicated they will ensure that the

facility complies with all EPA and Oregon DEQ requirements before issuing construction and operating permits.

2. Water Quality and Hydrology

The ODEQ issues Water Pollution Control Facility (WPCF) and National Pollutant Discharge Elimination System (NPDES) permits through its federal regulatory authority over discharges of pollutants to Oregon lands and surface water, as part of its efforts to protect and improve Oregon's water quality.

Wastewater Discharge

All process wastewater produced at the facility would be pumped to the Port of Morrow's existing Water Pollution Control (WPC) Facility. The ZeaChem biorefinery will be treating all process water utilizing an onsite anaerobic waste water processing facility within the biorefinery, prior to effluent discharge to the Port of Morrow WPC Facility. The wastewater must comply with ODEQ WPCF permit requirements, as well as the Port's Ordinance has more stringent requirements for pollutant concentrations. The Port of Morrow's existing WPC Facility Permit (Application # 990645) is for a Wastewater Lagoon and Land Application Treatment System. It is designated by ODEQ as a Class I Treatment System.

The Port of Morrow maintains over 5,000 acres of farm land within the Industrial Park for the disposal of food processing wastewater by land application. In this region of the Northwestern U.S., the waste water is a commodity for irrigated crops, and the industrial park leases the land for a variety of agricultural crops. The Port's WPC Facility currently discharges approximate 2 billion gallons per year via land application to irrigated crops. The estimated discharge volume that would come from the ZeaChem biorefinery to be discharged to the WPC facility is 12,470,097 gallons per year of effluent. According to the Port of Morrow (personal communication with Gary Neal, August 18, 2011), the existing WPC has sufficient capacity to treat these estimated effluent amounts without the need to expand lagoons, irrigation piping or land application areas. The Port is in the process of expanding their existing facilities winter storage lagoon to 100 percent of its current capacity. However the impetus for this expansion is for future projections within the industrial park, of which ZeaChem's biorefinery is a minor portion. Therefore, the WPC facility expansion of a winter storage tank is not considered a connected action to this proposal, and therefore will not be reviewed under this environmental assessment.

All sanitary water will be pumped to Port of Morrow's hook up with the City of Boardman to be processed at the City of Boardman wastewater treatment facility, located to the southeast of the property (Figure 1).

Stormwater Discharge:

Based on federal regulations, National Pollutant Discharge Elimination System (NPDES) permit coverage is required for industrial facilities that discharge stormwater from their industrial areas to surface waters of the state, or to storm drains that discharge to surface waters. The National Pollutant Discharge Elimination System (NPDES) 1200-C, 1200-CN and 1200-CA general permits apply to construction activities including clearing, grading, excavation, materials or equipment staging and stockpiling that would disturb one or more acres of land.

The NPDES 1200-Z general permit applies to industrial facilities that discharge stormwater from their industrial areas to surface waters of the state, or to storm drains that discharge to surface waters. Both the NPDES 1200-C and 1200-Z general stormwater permits will be obtained from ODEQ for this proposal.

Water Supply

Water supply for the biorefinery would be obtained from the Port of Morrow Industrial Park. The source of their water supply is from five existing permitted deep alluvial wells owned and operated by the Port of Morrow Industrial Park augmented by a link with the City of Boardman's municipal system. According to the Port of Morrow (personal communication with Gary Neal, August 18, 2011) the Industrial Park has adequate water supply for the fully operating biorefinery for the life of the facility.

There would be no adverse effect to the water supply as a result of the procurement of the feedstocks, as agricultural residues are being harvested from existing farm fields and the forest residuals and coppice materials would be harvested from an existing tree farm, both of which have allocated water rights from various sources.

The Facility would employ approximately 65 employees on-site. The supply of potable water would originate from a system already present on the industrial site. The operation would use potable water for sinks, showers, toilets, eye wash stations, and emergency shower stations.

There are no Sole source Aquifer areas or pending areas within Morrow County or adjacent counties according to the USEPA sole source aquifer database (<http://yosemite.epa.gov/r10/water.nsf/Sole+Source+Aquifers/SSA>). There is one critical aquifer in the area, the lower Umatilla, which is not issuing new irrigation permits; however the majority of the irrigation for the proposal areas 50-mile radius is either obtained from other aquifers or Columbia River water rights.

The Proposal's design, effluents, and extensive pre-treatment are consistent with the State's waste treatment management standards and water quality standards. No impacts on the current raw water supply for the area are anticipated to be incurred. Therefore, the Proposal

would not create a shortage of water that could adversely affect the present users of water or any volume reduction in water to the wildlife or environment. No negative water supply issues are expected in terms of human health, safety, or welfare problems.

3. Solid Waste Management and Hazardous Materials

Nearly all of the biomass carbon inputs for this proposal will end up in the biofuel or biochemical end products or in the lignin co-product. Therefore, the proposal is not anticipated to have any discernable impact on current solid waste management operations. The proposal is not anticipated to produce significant volumes of solid waste as the process will utilize a cell recycle process which essentially eliminates any solid waste, by processing any remaining wastes through the wastewater. In the event that all wastes are not eliminated via cell recycling and through wastewater discharge, a polishing unit will be employed to take out solid waste, specifically cell material, which will then be sold as fertilizer for local agricultural crops.

In addition to the production of acids, esters, and alcohols the Biorefinery will produce bi-products. The biproducts that the facility may produce include lignin, acetic acid, and ethyl acetate. ZeaChem anticipates producing primarily cellulosic ethanol and lignin at this time, but may also produce acetic acid and ethyl acetate reducing its ethanol production, but not below 51 percent by BTU content, should market dynamics dictate this production.

Lignin is a compound found in the cell walls of plants that fills in between the cellulose and hemicelluloses components. The lignin essentially helps to provide a structural integrity to the plant. It is non hazardous and abundantly found in nature. Lignin is used in many markets. Most commonly it can be used as a binder or dispersant in a lignosulfonate form, or for its heating or BTU value as it has a low ash content and higher BTU value than powder river basin coal (the local fuel source).

Given the roughly 225,000 BDT per year feed rate of biomass, the Boardman Biorefinery will produce approximately 70,000 BDT per year of lignin. In order to haul this amount of lignin from the facility, it is estimated that it will require an additional 9.5 trucks per day. See the Transportation Section for further discussion on lignin transportation. ZeaChem currently has a letter of interest from Borregaard LignoTech, the world's leading supplier of lignosulfonate, to purchase the lignin from the Biorefinery.

Lignin and lignin products are sold all over the world, for prices ranging from \$90-\$900/ton and as such there is no intent to landfill this bi-product.

According to the Port of Morrow ((personal communication with Gary Neal, August 18, 2011) the Tidewater Terminal Company dock has sufficient capacity to handle ZeaChem's ethanol shipment/bioproducts shipment, and additional work on the land or in the water for port expansion would not be necessary. Tidewater Barge Lines, on behalf of ethanol shipping

customers, obtains and maintains EPA Permits for Oil Spill Prevention for transportation of ethanol, and other fuel products on the Columbia River.

4. Land Use, Geomorphology, Geology, Soils

The proposed area for the biorefinery is located on 25 acres within the Port of Morrow Industrial Park, East Beach Section. The Port of Morrow owns greater than 9,000 acres including industrial and commercial developments, irrigated croplands and undeveloped acreage. The 25-acre parcel is currently zoned as Port Industrial by Morrow County. The Proposal will not result in any changes to land use other than the direct conversion of the 25 acre site from fallow industrial zoned land and to an industrial use. The land was formerly utilized as agricultural land and adjoined to the northern parcel by circle irrigation. A Land Use Compatibility Statement will be obtained from the ODEQ for the proposal in conjunction with city/county planners. Prior to beginning construction activities a Zoning Permit from the Morrow County Zoning Ordinance Article 4 Section 4.165 will be required to review for site design requirements.

The general area consists of the Columbia River valley, rolling-hills and plateaus. The subject property is within the Columbia Basin physiographic province and Umatilla Sub-Basin which is a large semi-arid region of northeastern Oregon bounded by the Blue Mountains to the South and East and the Columbia River to the North. The Basin area comprises all of the Umatilla River drainage basin within Umatilla and Morrow Counties. The major urban areas within the Basin include: Boardman, Pendleton, Hermiston and Milton-Freewater. The geology of the Boardman-Port of Morrow area consists primarily of a lave-floored plain overlain by sand, gravel and silt. The sediments were deposited during the past flooding and damming of the Columbia River. The terrain is dominated by mixed rolling and level relief with intermittent stream dissected terrains. The average elevation of the area is about 310 feet.

The USDA Natural Resources Conservation Service has mapped the underlying soils in the area as the Quincy loamy fine sand having 2 to 12 percent slopes (Appendix 2). The soil is excessively drained and formed in mixed sand. It is located on terraces near the Columbia River at elevations between 250 and 700 feet. The hydrologic group is Class A-High infiltration rates. The soil is generally deep and has a high corrosion potential on uncoated steel.

5. Transportation.

The site is located on the Columbia River with existing liquid fuel barge transportation facilities operated by Tidewater Terminal Company, and is served by Union Pacific (UP) mainline rail and US Interstate Highway 84. Therefore, the site is already planned and constructed to accommodate significant heavy vehicle transportation. Tidewater Barge Lines and UP Railways currently bulk ship biobased fuels and products from the Port of Morrow. The subject property is easily accessed via paved Rail Loop and Lewis and Clark Drive. The subject

property is located about ¼ of a mile southeast of Columbia Avenue which is a main thoroughfare for the Port of Morrow Industrial Park developments as well as being the primary route into Boardman. Interstate 84 is accessible within a few miles of the site. Railroad tracks adjoin the site to the South, East, and West.

The proposal would result in a cumulative increase in truck traffic of approximately 23.1 trucks per day for import of straw and stover feedstock and export of lignin byproduct, and a cumulative increase in car traffic of approximately 65 cars per day to accommodate employees. All other transportation venues for the proposal, import of forest residuals feedstock and shipment of ethanol, are anticipated to remain the same due to the fact that forest residuals are shipped from the same port location if not used in the ZeaChem process and the barge traffic for the ethanol shipment would be utilizing empty barges returning to other ports after delivery to the Port of Morrow and ports further inland.

According to feedstock volume estimates, the total increase in truck traffic which would result from the supply agricultural residue to the Biorefinery would be approximately 13.6 trucks per day. A standard truck can carry 20 tons of feedstock. The current traffic from the agricultural residue contractor is 100,000 tons/year (or 13.6 trucks per day). The Biorefinery would increase this amount to 200,000 tons/year, so that the total increase would be 13.6 trucks per day as a result of the facility. The other two feedstock sources which provide forest residues, are currently shipping all product to the port for export via barge, therefore the only change proposed by diverting this feedstock to the Biorefinery is that its destination would be diverted from the Port to the Biorefinery which is located within approximately one mile.

The Biorefinery would produce approximately 70,000 BDT/yr of lignin. Lignin is expected to be shipped via truck and is expected to increase traffic approximately 9.5 truck load equivalents per day. Other waste products are not anticipated (as discussed in the Section IV. 3. Solid Waste Section) but if they were produced the volume would not produce significant traffic to haul away from the facility. Therefore as stated above, the cumulative increase in truck traffic for the proposal would be approximately 23.1 trucks per day.

USDA RBS contacted the local Planning offices in the municipality of the project location in order to make them aware of the project and any proposed impacts. According to Morrow County Planning Department future traffic volumes based on industrial levels of development are being utilized and should be sufficient for the ZeaChem proposal (Appendix I).

ZeaChem plans to install a pipe underground within the existing rights-of-way of the road and railway in order to pipe ethanol from the northeastern portion of the Biorefinery to the Barge Load out Rack owned and operated by Tidewater Terminal Company, located approximately 2,400 feet away. The shipment of ethanol would be via barge. It is estimated that one barge can

transport 1 million gallons of fuel so it is estimated the proposal would require approximately 25 barge loads over a year. The barges that deliver to this port and further inland ports are empty when they leave port, therefore the shipment of ethanol for this proposal would be utilizing empty barges and would therefore be “back hauling” from fuel barges delivering gasoline or distillates from Portland to inland ports. The proposal is not expected to result in new barge traffic, just a better utilization of the barges that deliver to the Port of Morrow and other inland ports (<http://tidewater.com/transport.php>).

6. Natural Environment/Biological Resources

The proposal is to be located within 25 acres of land within an existing Industrial Park, and existing railroad loop, on currently undeveloped land (see Photographs in Figure 4). The site is among various plots of undeveloped land and industrial businesses in the park. The area is composed of various grass vegetation that has established after agricultural cropping was ceased within the past several years. While Morrow County contains a diverse array of aquatic and terrestrial habitats, and biodiversity of mammals and vertebrates that occur in the county, the proposal is located within an area that does not contain adequate habitat for these species.

Microorganisms Proposed for Use

The microorganisms proposed for use at the biorefinery are acetogens and are naturally occurring, and are not identified as genetically modified organisms (GMOs). The microorganisms have found competitive niches in many natural environments such as freshwater and marine sediments, deep subsurface sediments associated with oil fields, sewers, anaerobic digesters, and the gastrointestinal tracts of termites, cockroaches, ruminants, and monogastric animals including humans. In the ZeaChem fermentation process, the acetogen turns the biomass sugar molecules into acetic acid. Acetogens have the unique ability to produce acetic acid from sugars and produce no CO₂ during fermentation compared to competing technologies. A 50 percent higher carbon efficiency translates into lower costs and the acetogen platform can produce multiple products of bio-based ethanol, fuels and chemicals.

7. Human Population: Socioeconomic Factors

The land directly adjacent to the industrial park contains only a small amount of residential properties. Population increases are not expected to occur due to the proximity to the Industrial Park. The surrounding rural area has large tracts of land that are used primarily for agricultural purposes. The Proposal would require 65 full-time employees, and would hire local candidates if possible. No discernable impact is expected with this slight additional traffic generated over a 24 hour period, and no additional air emissions or odors are anticipated.

The Proposal would employ approximately 275 construction workers during the 18-month construction period and 65 full time employees to provide operations and maintenance services (O&M). No permanent population relocations are contemplated or anticipated for the Project, as

Project staff is expected to be hired locally. The Project is not anticipated to affect nearby residents because of the Project's location is within a working industrial park and therefore would not be converting land use. The Project is not expected to have an impact on public health through emissions since all of the emissions from the plant are quite low and within permitted limits.

Near-by populations (including minority and low-income):

According to the 2000 census, for the proposal area (census tract 41049970100), the population density was 798 people per square mile for Boardman, OR, the adjacent town. The percent minority for this census tract was 39.6 percent minority. The racial makeup of the town was 55.24 percent White, 1.93 percent Native American, 0.70 percent Asian, 0.39 percent African American, 0.11 percent Pacific Islander, 38.74 percent from other races, and 2.91 percent from two or more races. Hispanic or Latino of any race were 50.12 percent of the population.

The median income for a household in the town was \$32,105, and the median income for a family was \$32,543. About 16.3 percent of families and 20.1 percent of the population were below the poverty line.

Morrow County

As a comparison, in Morrow County, according to the 2000 census, the population density was 5 people per square mile. The percent minority for the county tract was 24.73 percent minority. The racial makeup of the county was 76.27 percent White, 0.14 percent Black or African American, 1.42 percent Native American, 0.45 percent Asian, 0.08 percent Pacific Islander, 19.54 percent from other races, and 2.14 percent from two or more races. Hispanic or Latino of any race were 24.43 percent of the population, 13.6 percent were of German, 12.8 percent American, 8.3 percent Irish and 8.0 percent English ancestry.

The median income for a household in the county was \$37,525, and the median income for a family was \$40,731. About 11.30 percent of families and 14.80 percent of the population were below the poverty line.

The proposal is not anticipated to have a disproportionate adverse effect on any minority or low-income populations. Please refer to Appendix II to review Rural Development Form 2006-38, Rural Development Environmental Justice and Civil Rights Impact Analysis and accompanying figures. To the contrary the proposal is expected to have several beneficial effects to the communities.

8. Construction.

Construction impacts on the environment are expected to be insignificant as the facility would be located within an existing industrial park. Because the site is relatively flat, only modest

excavation is necessary for footings, unless geotechnical consults indicate a need for greater footings. Construction would be of metal panel buildings with nominal waste and debris. The construction site would be sprinkled with water to reduce dust during the construction period. The proposal would create approximately 275 construction jobs, and 65 full-time operation jobs

9. Energy Impacts

The Facility would require electrical, natural gas, water pollution control, wastewater routing to City of Boardman, and water supply facilities in order to operate. All of these utilities are available onsite from local utility companies. Port of Morrow (water and water pollution control supplier), Umatilla Electric Cooperative (electric supplier), and Cascade Natural Gas (natural gas supplier), have indicated that the anticipated usage of each of their resources would not be an issue. In addition, the area would still have capacity for these utilities for any future projects.

The Proposal would produce more energy than it consumes, so it would have a positive energy impact on the area. ZeaChem's high-yield process gives it sustainable competitive advantage in both economics and environmental impact (Greater efficiency means less feedstock, less feedstock means less cost and less water, land, and thermal energy, less thermal energy means less emissions to produce a gallon of ethanol).

The proposal would require expenditures of energy, including natural and depletable resources, during the construction phase. For example, an increase in energy resource consumption during the construction phase of the proposal is expected due to diesel and gasoline demands for power machines. However, the energy use would be short-term and have negligible impacts to energy resources, with no appreciable effect on energy availability or costs. Adverse impacts on energy resources associated with the operation of the proposal are expected to be negligible relative to the amount of energy which would be created from the conversion of woody biomass to ethanol and other biproducts. Refer to Section IV 12. for utilities descriptions.

10. Noise, Vibrations, Seismic Conditions, Fire-Prone locations, radiation, aesthetic considerations.

Noise

No noise problems are anticipated. Several trucks per day would be loading and unloading at the site, but not continuously. The noise levels outside the boundary of the project are not expected to be at nuisance levels.

Vibrations

No significant vibration problems are present around the proposed plant location nor are expected to be produced as a result of the plants operation.

Seismic

The site is not located over any major or minor fault lines and is in a low to moderate probability area for Seismic Conditions according to the 2008 U.S. Geological Survey (USGS) National Seismic Hazard Map which display earthquake ground motions for various probability levels across the United States

(<http://earthquake.usgs.gov/hazards/products/conterminous/2008/maps/wus/pacnw/2scSA.OrWa.jpg>).

Fire-prone location

The plant is not located in a fire-prone area.

Radiation

No known radiation is present around the proposed plant location nor would the proposal procure, produce, or utilize any radioactive elements in the operations of its facility, so no radiation risk would be present.

Aesthetics

No aesthetic issues associated with the proposed project are anticipated given that it is an existing Industrial Park.

Odor

The cellulosic materials proposed for use at the Facility and the process itself are not expected to generate odors which would be objectionable to adjacent businesses or residences.

11. Safety and Occupational Health

Site safety would be managed by strict adherence to U.S. OSHA requirements as well as ZeaChem's safety policy. The site boundary would be fenced and would be closed 24 hrs a day and accessible only by authorized personnel with approval from ZeaChem. Any personnel entering the site must adhere to the ZeaChem Safety policy.

All safety precautions would be taken in the design of this project. Employees and contractors are expected to wear the correct personal protection equipment (PPE) at all times. Routine scheduled safety meetings would be held in order to emphasize the importance of safety. Any safety issues would be reported immediately, and corrective actions would be determined. Safety items would be tracked by the construction company and their Environmental Health and Safety Group. Process Safety Management programs would be required.

12. Utility Infrastructure

All utilities associated with the proposal, wastewater, water, electric, and natural gas are existing on the 25 acre site, with the exception of one ethanol pipeline, which would be installed along an existing road and railway right-of-way, from the Biorefinery to the Tidewater Terminal Company liquid loading facility located approximately 2,400 feet away. Refer to Figure 5 for a detailed plan of the utilities and the Northern Boundary utilities connection area.

For purposes of this Environmental Assessment (EA) this proposal includes the construction of the cellulosic ethanol Facility within the 25-acre proposal area and associated on-site utilities including the following:

Wastewater

The ZeaChem biorefinery would be treating all process water utilizing an onsite anaerobic waste water processing facility within the biorefinery, prior to effluent discharge to the Port of Morrow Water Pollution Control (WPC) Facility. All process wastewater produced at the facility would be pumped to the Port of Morrow's existing WPC Facility. The site currently has sufficient water pollution control facilities from the Port of Morrow Industrial Park to land apply effluent and the connection would be made at the Northern Boundary of the facility along rail loop drive (Figure 1). The Industrial Park's WPC facility is located within the industrial park, and has capacity sufficient to accommodate the Facilities needs.

Water

The site currently has sufficient water supply from the Port of Morrow Industrial Park water system and the connection would be made at the Northern Boundary of the facility along rail loop drive. The Port of Morrow Industrial Park water system is more than capable of supplying the base load needs of the biorefinery; the source is five existing permitted deep alluvial wells owned and operated by the Port of Morrow Industrial Park augmented by a link with the City of Boardman's municipal system.

Electrical

Umatilla Electric Cooperative Power can provide sufficient on-site power. The site currently has sufficient electric supply and the connection would be made at the Northern Boundary of the facility along rail loop drive.

Natural Gas

Cascade Natural Gas would supply natural gas to the site and the connection would be made at the Northern Boundary of the facility along rail loop drive. Cascade Natural Gas has sufficient natural gas supply to this area.

Ethanol Distribution Pipe

A new ethanol distribution pipe would be installed from the Biorefinery along the existing road and railway right-of-way which exists off the southern property boundary of the 25 acre site and would extend to the Tidewater Terminal Company liquid loading facility located approximately 2,400 feet away.

The proposed facility would not result in significant adverse impacts to the environment because the proposed facility and utility upgrades are in keeping with federal and state requirements and as such is not expected to have significant adverse effects. Minor adverse effects to the flora and fauna may result from the localized construction of utility upgrades, but these effects are expected to be minimal.

No infrastructure improvements are anticipated to be required for the railway or barge load out systems for delivery of the feedstock or shipment of ethanol or bi-products.

13. Feedstock Availability and Proximity

The Biorefinery proposes to convert 225,000 bone dry tons (BDT) per year of cellulosic biomass (woody biomass and agricultural residues) for the production of 51 percent or more cellulosic ethanol or other biofuels by British Thermal Unit (BTU) content and 49 percent or less biproducts by BTU content using ZeaChem's patent protected technology. ZeaChem has executed feedstock supply arrangements with GreenWood Tree Farm Fund (GTFF) to supply the base portion of their feedstock requirement with hybrid poplar grown at the GTFF's farm located approximately 10 miles away from the proposed facility for the supply of up to 70 percent of the feedstock requirements. ZeaChem has executed feedstock supply arrangements with local agricultural residue suppliers for straw and stover to supply agricultural residues in the amount of 100,000 to 146,000 BDT/year for the supply of up to 30 percent of the feedstock requirements. Although a wide variety of wood biomass is technically suitable for the ZeaChem Process, economics are expected to dictate that facilities feedstock would be made up of hybridized poplar hogfuel, clean chip, coppice chip, straw and stover obtained within a 50-mile radius of the facility (Figure 6).

ZeaChem has also been pursuing additional feedstock from other local aggregators of agricultural residue and their affiliated farms, to further bolster the Biorefinery's feedstock supply position. ZeaChem has received a letter of intent from another aggregator to supply 50,000 tons per year of supplementary agricultural residue.

A Biomass Crop Assistance Program (BCAP) award was issued to ZeaChem on July 26th, 2011. The BCAP award includes funding for a 7,000-acre intercropped hybrid poplar coppice tree project within the GTFF's 35,000 acre tree farm located in Boardman. The award is designed to

service ZeaChem's cellulosic ethanol facility. The BCAP award will allow GTFF to enter into a contract with the USDA to receive up to 75 percent of the costs to establish up to 7,000 acres of intercropped hybrid poplar coppice trees and up to 15 years of annual maintenance payments for the crop. <http://www.ethanolproducer.com/articles/8025/bcap-project-targets-hybrid-poplar-for-zeachem>

BCAP, created in the 2008 Farm Bill, helps farmers and forest landowners with start-up costs of planting non-food energy crops for conversion to heat, power, biobased products and advanced biofuels. BCAP is designed to ensure sufficient biomass is available to reduce America's reliance on foreign oil, improve domestic energy security, reduce pollution and spur rural economic development and job creation.

An adjacent 250,000 gallon per year demonstration-scale ethanol biorefinery, owned by ZeaChem, received a \$25 million grant awarded by the U.S. Department of Energy (DOE) last year and is currently under construction on the adjacent 5-acre parcel in this leased portion of the Port of Morrow Industrial Park (Figure 5 and Appendix I). The demonstration-scale facility will require approximately 2,250 to 3,650 bone dry tons (BDT) per year of cellulosic biomass to be obtained from GTFF. The long-term feedstock agreement between GTFF and ZeaChem calls for GTFF to provide all of the feedstock for the demo facility and the majority of feedstock for the Biorefinery.

GreenWood Tree Farm:

GTFF consists of an approximately 30,000-acre of tree farm, and milling operation located at 77200 Poleline Road, Boardman, OR 97818. GreenWood Resources, owner of the farm, is a worldwide leader in the hybridization of fast-growing, high yield poplar trees. The company has developed and managed sustainable, environmentally certified tree farms that purportedly help reduce reliance on natural forests and non-renewable energy sources.

GreenWood Tree Farm: Normal Operations

Normal operations at GTFF are to plant hybridized poplar trees for harvest every 12 years for use as saw logs. The tops, branches, and stumps of the trees, or forest residue, is chipped in field and referred to as hog fuel. Hog fuel is burned as fuel for heating and thermal operations. It is sold primarily to the paper mill industry for use in boilers or to biomass producers to produce energy, and used to make steam power. Other hog fuel constituents include the bark stripped off the saw log.

Other forestry products obtain at the saw mill and include saw dust (from sawing), planer dust (from leveling), and clean chip (left over from cutting boards) which are referred to collectively as clean chip. Clean chip and hog fuel are both used by the pulp and paper industry and trucked to the Port of Morrow for barge shipment to distribution markets.

GreenWood Treefarm – Operational changes for ZeaChem supply of Hybridized Poplar – HogFuel, Clean Chip, and Coppice Chip

The BCAP award would allow the establishment and maintenance of 7,000 acres of intercropped hybrid poplar coppice trees by GTFF. Operations at the tree farm would change after the feedstock agreement between GTFF and ZeaChem is initiated. The hybridized poplar coppice trees would be intercropped (every other row). One row would be maintained the traditional way with harvest for saw logs every 12 years, and the next row would be harvested every three years. Every three years the trees are trimmed and chipped in the field. All of this specialty intercropping material is referred to as coppice chip, because when the tree grows back from the stump it is called coppicing. Coppice chip would be trucked for use at the ZeaChem facility.

ZeaChem would use hog fuel and some clean chip from the regular 12 year rotation saw log operations. ZeaChem would also use coppice chip from the intercropping materials.

According to estimates GTFF indicates that if hybrid poplar were used to supply all of the commercial plant's feedstock, it would require approximately 12,500 acres, which is approximately half of their 35,000 acre tree farm. However, ZeaChem plans to utilize agricultural residues in addition to woody biomass, so this is not expected.

Local Agricultural Residue Suppliers - Wheat Straw and Corn Stover

ZeaChem has executed feedstock agreements with local agricultural residue suppliers to supply the facility with wheat straw and corn stover obtained from a 50-mile radius in a tri-county area (Morrow, Benton, and Umatilla Counties). According to a feedstock analysis completed for ZeaChem, the total potential corn stover and wheat straw available within a 50-mile source area, including three counties, Morrow, Umatilla, and Benton, on existing farms in operation, is roughly three times the amount of agricultural residue required by ZeaChem's facility based on studies performed by the local feedstock suppliers. If this wheat straw were not utilized in the ZeaChem facility, it would be baled and used locally for animal bedding in local dairies, shipped overseas for the same use, or recycled by leaving in the field or tilled back into the soil. Some wheat straw is also used locally for roughage for dairy/beef cattle.

Because the Boardman area and Morrow County Region has been developed as a food processing hub since the 1970's, technology and best management practices and sustainable cropping practices have become the norm in this region. Wheat and corn growers practice sustainable harvesting techniques which leave adequate agricultural residues on the field in order not to deplete soil nutrients and organic matter based on standard practices in the area, which is mostly no-till. No-till farming practices require that some of the straw is baled off to get through the next year with seed drills. Therefore, the proposed facility should not spur conversion of non-agricultural areas into feedstock supply in order to ensure its feedstock supply.

Based on this analysis, there is sufficient cellulosic fiber present within a 50-mile radius of the proposed Facility site to adequately satisfy the 225,000 BDT per year of the Facility. In summary, the proposed facility would not result in adverse impacts to the surrounding environment from the harvesting of the feedstock because the proposed feedstock sourcing area is within a 50-mile radius and is 1) to be conducted in keeping with existing paper products industries harvesting methods and those supported by BCAP and existing sustainable agricultural practices for agricultural residues which are both currently in surplus for the desired feedstock source, and 2) represents less than 33 percent of annual woody biomass supply/consumption in the area, of just agricultural residues, and as such is not expected to have adverse effects.

Feedstock Pretreatment, Transportation and Storage

ZeaChem would not have a fleet of trucks so all biomass purchased by ZeaChem would be on a freight-on-board basis upon delivery to the biorefinery. Storage at the biorefinery would be limited to approximately two to three days of onsite stock storage. The feedstock would not need to be dried due to the dry climate in the area. The process may utilize both feedstocks (forest residues and agricultural residues) with the moisture contents as delivered. Agricultural residues are to be received in chip form in bulk, and the facility equipment would size and qualify the residues upon delivery. The biomass supplied to ZeaChem would have to be relatively clean and uniform and free of foreign debris and mold, as there is only minimal pretreatment proposed when received and entered into the facility via conveyor belt.

The proposed facility is located in eastern Oregon along I-84. This part of Oregon is rural in nature and dominated by irrigated agriculture. The wheat straw and corn stover feedstock would be trucked from within a 50-mile area of Boardman. This 50-mile radius area includes three counties, Umatilla, Morrow, and Benton Counties. GGTF is located within 10 miles of the facility, and hogfuel, clean chip and coppice chip would be trucked from that location.

Due to the percentage of annual biomass growth in the area and conservation measures which maintain sufficient biomass on the fields, the Facility is not expected to have significant impacts to the surrounding environment from the harvesting of the feedstock, with respect to water supply, organic carbon sequestration, soil erosion, fire prevention, pest eradication, or any potential impact to threatened and endangered species which may occur in the areas of harvest.

V. Coastal Zone Management Act

The proposed project is not located within areas protected by the Coastal Barrier Resources Act of 1972 (16 U.S.C. part 3501 et. seq.) or defined as coastal zone by the Coastal Zone Management Act (16 U.S.C. part 1451 et seq.). The ZeaChem Facility is not located within the Coastal Management Program Boundary in Oregon, therefore impacts to coastal areas would not occur as a result of this proposal.

VI. Compliance with Advisory Council on Historic Preservation's Regulations

Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, requires federal agencies to take into account the effect of undertakings on historic properties (archaeological sites and historic buildings, sites, landmarks and districts) that are eligible for and/or listed on the National Register of Historic Places (NRHP). This consideration must be made in consultation with the Oregon State Historical Preservation Office (OSHPO). According to the NHPA, Indian tribes must also be consulted regarding any potential impact the proposal may have on tribal cultural and/or historical resources.

Initiation of the Section 106 Process: Description of the Undertaking

The proposed undertaking is the issuance of a loan guarantee by RBS for the construction and operation of the proposed biorefinery and would involve ground disturbance within the 25 acre leased property as well as approximately 2,400 LF of ethanol distribution pipe that would extend along an existing disturbed right-of-way of the railway and road. The federal involvement is the issuance of a loan guarantee for this undertaking.

Identification of Historic Properties

ZeaChem contracted Plateau Archeological Investigations, LLC (Plateau) to review documentation on known historic properties within the area of the undertaking. On February 15, 2011 Plateau supplied a letter report indicating that there are no known historic resources within the proposed 25-acre project site. The report, however, went on to indicate that there is a moderate potential for intact historic resources on the 25 acre proposed site for the undertaking. Plateau recommended initiation of an archeological investigation in order to determine whether or not historic resources were present within the site. RBS concurred with the need to complete further archeological studies to determine if unknown historic sites exist that may be eligible for the National Register of Historic Places.

In a letter dated May 18, 2011, OSHPO responded to a request for information, submitted by ZeaChem's consultant (Appendix 3). In this response, the OSHPO indicated that prehistoric archeological sites are known to exist in this area so the OSHPO wants to ensure that the current project APE does not adversely affect any unknown sites. In a letter dated July 27, 2010, RBS contacted the OSHPO to notify them of the undertaking, supply them with a copy of the February 15, 2011 letter report completed by Plateau, to request any additional information on the proposed property, and in order to consult on the list of interested parties for the undertaking, including Indian Tribes. SHPO responded via email on July 29, 2011 and via phone call, that based on the fact that prehistoric sites are known to exist in the area, further archeological studies would be required prior to determination of effects. RBS concurred with the need to complete further archeological studies.

Invite Consulting Parties and Seek Information From Consulting Parties

To invite the public in consultation for this undertaking and to seek information from the public on historic resources that may be affected by this undertaking, a 30-day preliminary public notice was published on July 12th, 13th, and 14th, 2011, in the East Oregonian to solicit comments from the public and interested parties. There were no responses from this public notice. In addition, inquiries as to the presence of historic resources associated with the undertaking were solicited from the jurisdictions and agencies that were contacted for the NEPA process and include, the Port of Morrow, City of Boardman, Morrow County, USFWS, ODEQ, and USEPA. No information on historic resources that may be present or impacted by the undertaking were found with this outreach.

RBS in consultation with the OSHPO (Dennis Griffin personal communication, July 2011) and the Oregon Commission on Indian Services (Karen Quigley personal communication, July 2011) identified four tribes who are known to be interested in potential tribal cultural and/or historical resources in Morrow County and/or the Columbia River. A consultation summary with these tribes is included below.

The Confederated Tribes of the Umatilla Indian Reservation (Umatilla)

RBS contacted the Umatilla Tribe via telephone on July 7, 2011 and followed up with a letter dated July 7, 2011 in order to conduct consultation with the Tribe on the proposed undertaking (Appendix 3). RBS received a request for additional information via email from the Umatilla on August 9, 2011, in order for the Umatilla to determine if there would be adverse affects to traditional cultural properties located in the area of the undertaking. RBS responded on August 10, 2011 via email with a detailed explanation to each request. Due to internal RBS deadlines, RBS invited the Umatilla Tribe to continue to conduct Section 106 consultation through a PA.

The Confederated Tribes of the Warm Springs Reservation of Oregon (Warm Springs)

RBS contacted the Warm Springs Tribe via telephone on July 7, 2011 and followed up with a letter dated July 7, 2011 in order to conduct consultation with the Tribe on the proposed undertaking (Appendix 3). Several additional phone call messages were left for and several emails were sent to the Warm Springs Tribe by RBS. No response was received; therefore RBS assumes that the Warm Springs Tribe has no comments on this undertaking.

The Confederated Tribes and Bands of the Yakama Indian Nation (Yakama)

RBS contacted the Yakama Nation via several telephone messages during the months of July and August and a letter dated July 7, 2011 in order to conduct consultation with the Tribe on the proposed undertaking (Appendix 3). Contact was made with the Yakama Nation on August 12, 2011 in which it was conveyed that the Yakama Nation would like to be copied on all correspondence for this undertaking but would not likely want to participate as a signatory to any agreement.

The Nez Perce Tribe (Nez Perce)

RBS contacted the Nez Perce Tribe via telephone on July 7, 2011 and followed up with a letter dated July 7, 2011 in order to conduct consultation with the Tribe on the proposed undertaking (Appendix 3). RBS received a request for additional information with respect to the type and intensity of archeological investigation proposed from the Nez Perce Tribe on July 13, 2011. RBS responded to those requests on July 13, and August 1, and August 11, 2011, with detail with respect to the archeological investigation and the permit to be obtained from SHPO for the investigation. RBS and the Nez Perce will conduct Section 106 consultation under a PA to conclude Section 106.

Assessment of Adverse Effects/Resolution of Adverse Effect

Although there are no known historic properties on the proposed site of the undertaking, RBS has requested participation of the OSHPO, the Advisory Council on Historic Preservation (ACHP), four Tribes, and ZeaChem for a Programmatic Agreement (PA) to conduct surveys and tribal consultation in order to formalize the path to conclusion of Section 106. The SHPO responded with comments on the PA on August 17, 2011. All comments were incorporated. RBS received a request for revisions to the PA from the Nez Perce Tribe on August 18, 2011 and incorporated all comments. RBS received a request for revisions to the PA from the Umatilla on Sept 8th, 2011 and incorporated all comments. The Nez Perce and the Umatilla are participating as consulting parties, but chose not to participate as invited signatories to the PA. Although they have not requested participation on this undertaking, both the Warm Springs Tribe and the Yakama Nation are also being copied on all correspondence for this undertaking.

The proposal is currently under review in order to determine if historic properties would be impacted by its implementation, and a programmatic agreement will be utilized in order to formalize the path to conclusion of Section 106 of the NHPA to ensure any impacts to potential historic properties are avoided or mitigated for in accordance with the NHPA. Implementation of the programmatic agreement will be made a NEPA mitigation requirement before any funds are dispersed or any Notice to Proceed for the proposal will be issued as described in Section XIX. Mitigation Measures. The programmatic agreement incorporates language for the protection of unanticipated discoveries and human remains. From what is currently known, RBS has determined that the undertaking does not presently pose significant adverse effect to historic properties, but if any National Register eligible properties are located within the Area of Potential Effect, avoidance or other mitigation will be used. If mitigation to bring effects below the significant threshold is not possible, RBS will supplement this EA or consider completion of an EIS for this proposal.

VII. Compliance with the Wild and Scenic Rivers Act

The ZeaChem Facility would not affect a river or portion of a river which is either included in the National Wild and Scenic Rivers System or designated for potential addition to the system.

The proposal is located approximately 500 feet from the Colombia River, which is not a wild scenic river at this location, but a navigable dam and dock controlled water-way.

VIII. Compliance With the Endangered Species Act

RBS evaluated the Federally listed, proposed, candidate species, and species of concern under jurisdiction of the U.S. Fish and Wildlife Service (USFWS) which may occur within Morrow County, Oregon. <http://www.fws.gov/oregonfwo/Species/Lists/>. There are no Federally listed threatened or endangered species and therefore no listed critical habitat in Morrow County. This list includes one candidate species the Washington ground squirrel (*Uroditellus washingtoni*) and 14 species of concern which include, birds, fish, reptiles and amphibians, and plants. None of the evaluated species or their habitats are known or suspected to occur on the 25 acre property to be developed by the facility or associated with the construction of the ethanol supply pipe. Little to no native habitat for these species exist on the site because it is currently fallow agricultural land within a developing Industrial Park. If, however, such species are discovered during construction or operation of the facility, ZeaChem will contact the USFWS and the Oregon Parks and Recreation Natural Resources Department for consultation.

RBS made a determination of no effect for federally listed threatened and endangered species to for the proposal on August 1, 2011, and forwarded a copy of this determination to the appropriate USFWS field office in accordance with Section 7 of the Endangered Species Act. Documentation and correspondence related to this determination are provided in Appendix I.

IX. Compliance With Farmland Protection Policy Act and Departmental Regulation 9500-3, Land Use Policy

Pursuant to the Farmland Protection Policy Act (FPPA), the subject site was evaluated to document the presence or absence of important farmland (including prime farmland, farmland of statewide importance, unique farmland, or farmland of local importance). Based on the Web Soil Survey from the National Cooperative Soil Survey for the Facility, one soil type is present on the site: Quincy loamy fine sand 2 to 12 percent slope soils unit, which is not designated as an Important Farmland. No other land conversion is included in this proposal.

X. Compliance with Executive Order 11988, Floodplain Management, and Executive Order 11990, Protection of Wetlands

According to the FEMA Flood Insurance Rate Map (FIRM) for the proposed site, the subject site is not located within a Special Flood Hazard Area or a 100-year or 500-year floodplain (See Appendix II for completed FEMA Form 81-93). The proposal is not expected to have any adverse effect to the 100-year floodplain or 500-year floodplain for critical actions.

There are no wetlands in the Project area, as determined by the US Corps of army engineers (See attached NEPA draft environmental assessment document for more information.). Quincy

loamy fine sand 2 to 12 percent slope soils unit. The Quincy series consists of very deep, excessively drained soils formed in sands on dunes and terraces. This soil is not listed as a hydric soil by the Natural Resources Conservation Service (NRCS), and does not include hydric inclusions.

XI. Compliance with Coastal Barrier Resources Act

The proposed project is not located within areas protected by the Coastal Barrier Resources Act of 1972 (16 U.S. C part 3501 et. seq.). Therefore, the proposal will not have impacts to coastal areas protected by the Coastal Barrier Resources Act.

XII. State Environmental Policy Act

The proposed project is not subject to a State Environmental Policy Act, as Oregon does not have such a program or state regulatory requirement.

XIII. Consultation Requirements of Executive Order 12372, Intergovernmental Review of Federal Programs

According to the U.S. Office of Management and Budget's website Oregon does not occur on the Intergovernmental Review (SPOC List). Although Oregon has chosen not to participate in the intergovernmental review process and therefore does not have a SPOC, in keeping with the requirements of EO 12372, RBS contacted the County of Morrow and the City of Boardman. There were no adverse affects identified through this consultation. Response letters from each jurisdiction are located in Appendix II.

XIV. Environmental Analysis of Participating Federal Agency

There are no participating Federal Agency's for this Environmental Assessment (EA).

XV. Reaction to Proposal

A Preliminary Public Notice of RBS's review of the biorefinery for funding, to solicit comments from the public on the potential to adversely impact historic resources and to notify the public of the proposal, was published in the local paper, which serves the proposal area, on July 12th 13th, and 14th, 2011, in the East Oregonian (Appendix IV). The 30-day preliminary noticing period ended August 14th, 2011. During this time RBS received no comments or requests from the public to review materials related to the proposal.

No public meetings were held by RBS on this proposal. To our knowledge there have been no other negative comments or public views expressed about this proposal.

XVI. Cumulative Impacts

The proposal is expected to have little cumulative adverse impact to the human environment based on the estimated air emissions and water discharge posed by the biorefinery and compared to those that currently exist in the area and along the Columbia River.

The proposal is expected to have a net positive cumulative impact on the human environment based on the fact that the plant would produce low carbon fuels that would help Oregon meet their greenhouse gas reduction goals, diversify their transportation fuel supply and develop markets for Oregon's biomass resources. Cellulosic biomass grows abundantly in this area and replenishes quickly and easily even in poor quality soil.

Plans for future expansion at the Biorefinery were reviewed but determined that they are not reasonably foreseeable actions that should be included in our environmental assessment at this time. Future expansion possibilities include: 1) installation of an alcohol to ethylene process unit adjacent to the Biorefinery to process cellulosic ethanol from the Biorefinery into ethylene; 2) installation of an alcohol to hydrocarbon fuel process unit adjacent to the Biorefinery to process cellulosic ethanol from the Biorefinery into jet/diesel/gasoline fuel. 3) expanding the existing facility to two times its proposed maximum cellulosic ethanol throughput capacity. Expansion of the Biorefinery would require additional feedstock supply arrangements if pursued in the future.

The Project is not expected to have an impact on public health through emissions since all of the emissions from the plant are quite low and within permitted limits. Construction of the project is not expected to have a significant impact on the natural environment,

XVII. Adverse Impact

As previously discussed, this proposal includes the construction of the biorefinery within 25 acres of the Port of Morrow Industrial Park, and related onsite infrastructure, and a proposed approximate 2,400 foot long ethanol pipe (underground) to be located north of Boardman, OR.

As indicated above, no wetlands, floodplains, or endangered or threatened species will be impacted as a result of this proposal. A programmatic agreement has been initiated which will ensure that there are no adverse effects on any historic resources, including traditional and cultural properties, on the 25-acre site, along the ethanol pipeline, or associated with procurement of the feedstock.

The proposal's construction activities would result in disturbed ground and vegetation and would temporarily produce dust and localized noise. The proposal would result in a minor adverse effect to local flora, fauna, and water quality due to construction and operation of the biorefinery, however, the facility would be operated in accordance with applicable water quality permits.

A minor increase in the amount of truck and car transportation would result from the proposal, however, access to and from the site should not change appreciably.

Indirect impacts would consist of a potential slight increase in air emissions in the area resulting from Facility operations. Air emissions would be monitored, and the facility would be operated in accordance with applicable air quality permits.

Implementation of this Proposal would not result in any significant adverse environmental impacts as defined Section 1508.27 of the Council on Environmental Quality (CEQ) regulations or in RD Instruction 1940.314(b). The proposal would have minor adverse effects to air quality, water quality, and local wildlife however it does not pose significant adverse effects to the natural or human environment.

XVIII. Alternatives

No Action Alternative

The no action alternative was considered, but due to the economic and regulatory benefits of the Proposal it was rejected. ZeaChem would be able to provide a higher value margin for the cellulosic materials proposed for use and achieve environmental benefits related to a reduction in GHG emissions from a reduction in the burning of fossil fuels.

Off-site Alternatives

Other industrial park locations in Oregon were considered, but no other alternatives provide the combined benefits of the proposed site. The proposed site is uniquely located at an existing port which currently ships both the feedstocks for the proposal. Other sites were not suitable in that they were not located along the Columbia River Ship Channel. In addition, the proposed site contains the existing infrastructure and utilities required for the proposal.

XIX. Mitigation Measures

Due to the potential for the presence of historic properties on the property, a programmatic agreement for conclusion of Section 106 of the National Historic Preservation Act will be utilized. Therefore the conditional commitment for loan guarantee must include the following statement:

Mitigation Condition 1. Implementation of a programmatic agreement for completion of Section 106 of the National Historic Preservation Act is a mitigation requirement before Notice to Proceed for the proposal will be issued

Other than this requirement, no adverse environmental impacts which require mitigation have been identified associated with this Proposal. A list of the permits which must be obtained for the proposal is listed in Table 3. The requirement to obtain all applicable permits is a general requirement in the conditional commitment for the loan guarantee, but this is not mitigation with respect to the National Environmental Policy Act, or RBS's environmental regulations.

XX. Consistency With Rural Development Environmental Policies

This Proposal is consistent with the RBS's environmental policies, the State Office's Natural Resource Management Guide and Federal and State environmental policies.

XXI. Environmental Determinations

The following recommendations shall be completed:

A. Based on an examination and review of the foregoing information and such supplemental information attached hereto, I recommend that the approving official determine that this proposal will have () a significant effect on the quality of the human environment and an Environmental Impact Statement must be prepared; will not have (X) a significant effect on the quality of the human environment.

B. I recommend that the approving official make the following compliance determinations for the below-listed environmental requirements.

Not in compliance		In compliance		
			X	Clean Air Act.
			X	Federal Water Pollution Control Act.
			X	Safe Drinking Water Act—Section 1424(e).
			X	Endangered Species Act.
			X	Coastal Barrier Resources Act.
			X	Coastal Zone Management Act—Section 307(c) (1) and (2).
			X	Wild and Scenic Rivers Act.
			X	National Historic Preservation Act.
			X	Archeological and Historic Preservation Act.
			X	Subpart B, Highly Erodible Land Conservation
			X	Subpart C, Wetland Conservation, of the Food Security Act.
			X	Executive Order 11988, Floodplain Management.
			X	Executive Order 11990, Protection of Wetlands.
			X	Farmland Protection Policy Act.
			X	Departmental Regulation 9500–3, Land Use Policy.
			X	State Office Natural Resource Management Guide.

C. I have reviewed and considered the types and degrees of adverse environmental impacts identified by this assessment. I have also analyzed the proposal for its consistency with Rural Development under Public Law 103-354 environmental policies, particularly those related to important farmland protection, and have considered the potential benefits of the proposal. Based upon a consideration and balancing of these factors, I recommend from an environmental standpoint that the proposal

X be approved.

___ not be approved because of the attached reasons.

Prepared by:

 09/12/2011

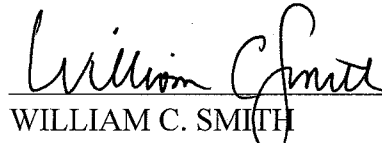
JULIET C. BOCHICCHIO Date
Environmental Protection Specialist, Program Support Staff

Recommended:

 9/12/2011

LINDA J. RODGERS Date
Director, Program Support Staff

Recommended:

 9/12/2011

WILLIAM C. SMITH Date
Director, Energy Division, Rural Business-Cooperative Service

Approved:

 9/12/11

JUDITH A. CANALES Date
Administrator, Rural Business-Cooperative Service

[49 FR 3727, Jan. 30, 1984, as amended at 53 FR 36266, Sept. 19, 1988]

FIGURES

Figure 1. USGS Map of the Proposed Location for Biorefinery

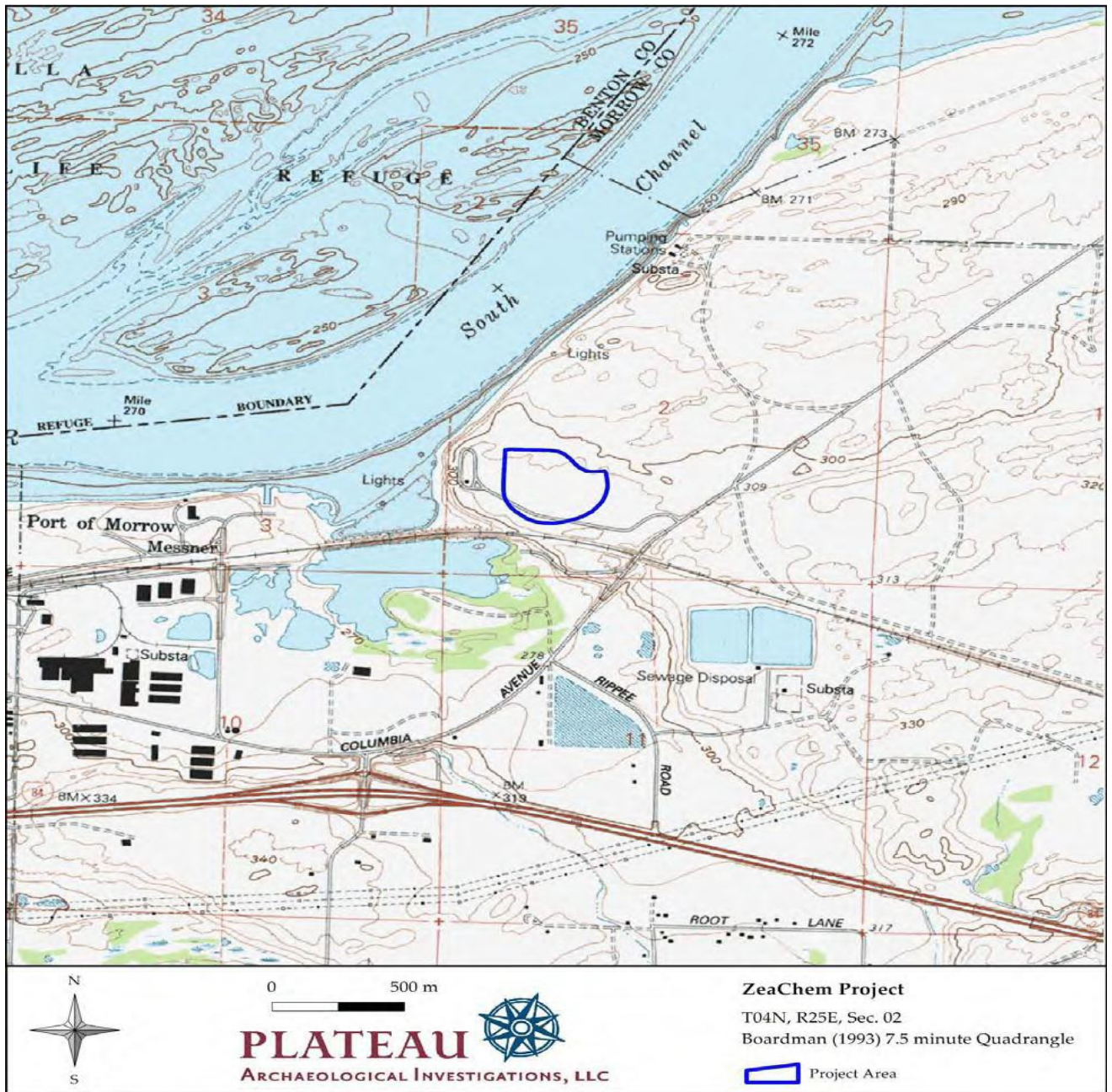
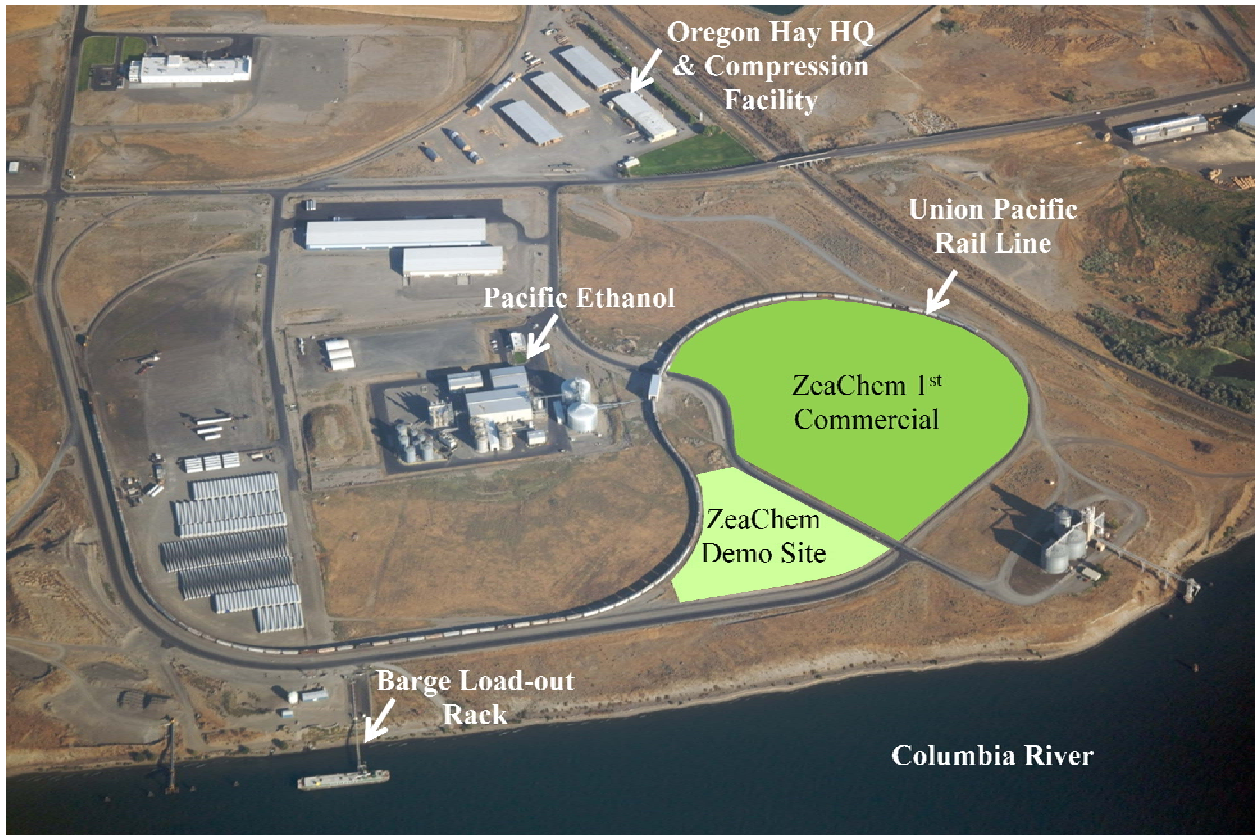
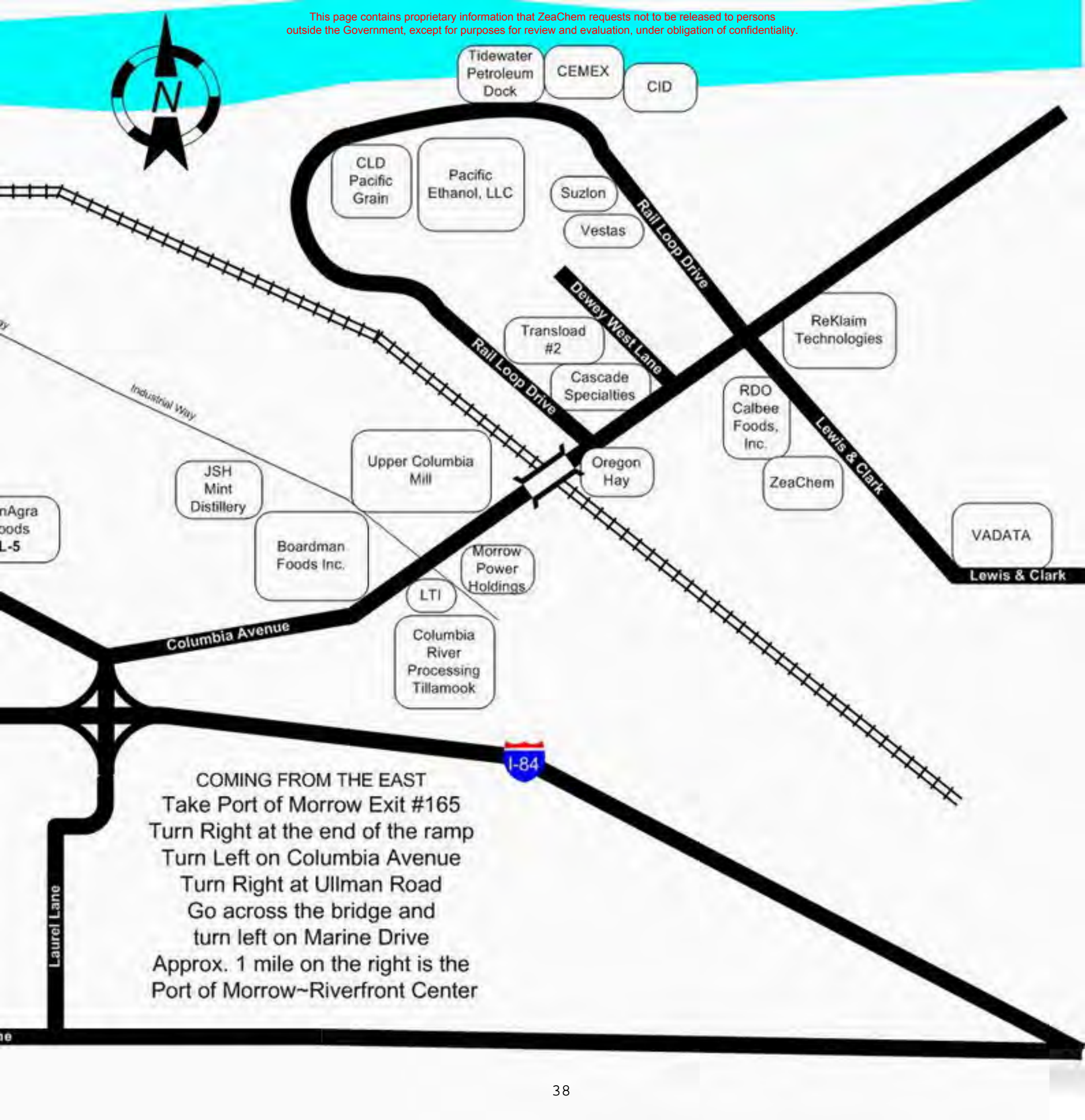


Figure 2. Aerial Photograph of the Proposed Location for Biorefinery





COMING FROM THE EAST
Take Port of Morrow Exit #165
Turn Right at the end of the ramp
Turn Left on Columbia Avenue
Turn Right at Ullman Road
Go across the bridge and
turn left on Marine Drive
Approx. 1 mile on the right is the
Port of Morrow~Riverfront Center



Photograph 1: Subject Property in left foreground and Cargill Grain Silo Facility in background.



Photograph 2: View Looking west at Columbia River and undeveloped land area northwest of subject property.



Photograph 3: View looking north in area of subject property.



Photograph 4: View looking southwest across Rail Loop Drive in central sector of Block B at CLD Pacific Grain Facility.



Photograph 5: view looking north from central sector of Block B at Tidewater Petroleum Dock.



Photograph 6: View looking southeast from Rail Loop Drive at Block B. East Pacific Ethanol Bio-fuels facility in right background.

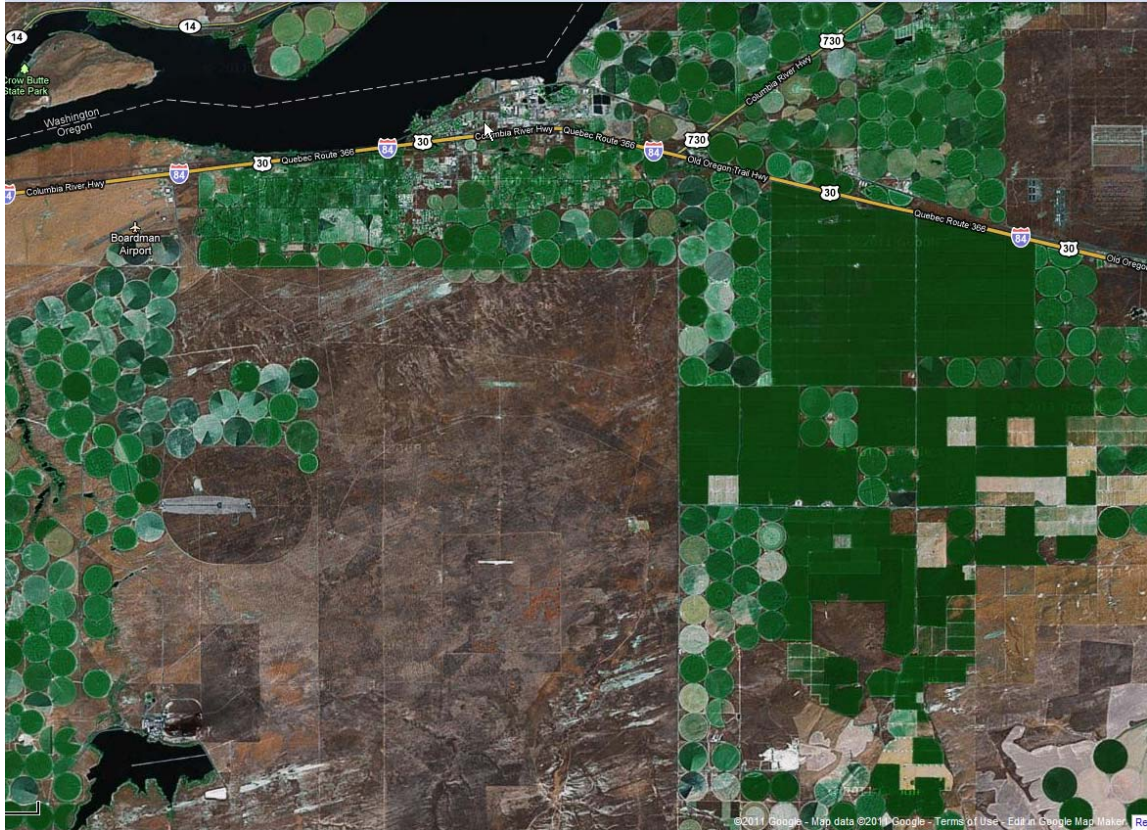


Figure 6 - ZeaChem's Oregon operations in Boardman can be encompassed in a 50 mile radius and consists of the feedstock (GreenWood and Agricultural Residues), the biorefinery, and product offtake (the ethanol rack for fuel and PGE for lignin).

APPENDIX I

PMC-EF2a

(201402)

**U.S. DEPARTMENT OF ENERGY
EERE PROJECT MANAGEMENT CENTER
NEPA DETERMINATION**



RECIPIENT: ZeaChem Inc

STATE: OR

PROJECT TITLE : High Yield Hybrid Cellulosic Ethanol Process Using High-Impact Feedstock for Commercialization by 2013

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000096	EE0002880	GFO-0002880-001	EE2880

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Order 451.1A), I have made the following determination:

CX, EA, EIS APPENDIX AND NUMBER:

Description:

- B3.6** Siting, construction (or modification), operation, and decommissioning of facilities for indoor bench-scale research projects and conventional laboratory operations (for example, preparation of chemical standards and sample analysis); small-scale research and development projects; and small-scale pilot projects (generally less than two years) conducted to verify a concept before demonstration actions. Construction (or modification) will be within or contiguous to an already developed area (where active utilities and currently used roads are readily accessible).
- A9** Information gathering (including, but not limited to, literature surveys, inventories, audits), data analysis (including computer modeling), document preparation (such as conceptual design or feasibility studies, analytical energy supply and demand studies), and dissemination (including, but not limited to, document mailings, publication, and distribution; and classroom training and informational programs), but not including site characterization or environmental monitoring.

Rational for determination:

This NEPA determination is for BP2 activities. BP1 activities were reviewed previously and categorically excluded from additional NEPA review.

DOE and cost share funds would be used to design, construct, and operate the "Boardman Project." The Boardman Project consists of the design, construction and operation of two standalone processing units. One unit would convert biomass to a fermentable sugar solution (chemical fractionation) and the other would convert carboxylic esters to ethanol (hydrogenolysis). The intent is for one unit to be installed at front end of the ZeaChem Core Facility and the other unit would be installed at the back end of the Core process. The Boardman Project, together with ZeaChem's Core Facility, would constitute an integrated cellulosic ethanol biorefinery capable of producing ethanol and other co-products from cellulosic materials utilizing patented chemical, thermal and biological processes.

DOE has determined that the ZeaChem Core Facility has independent utility apart from the DOE funded portions of the project. Therefore, this NEPA determination evaluates the incremental difference in environmental impacts between the construction and operation of the Boardman Project (chemical fractionation and hydrogenolysis) and the baseline, which is the ZeaChem Core Facility.

ZeaChem Inc. has obtained all of the permits required for construction and operation of the both the Core Facility and the Boardman Project. The proposed site is located within an existing agricultural/industrial park. The site is currently being used for the construction of the Core Facility. The combined facility will be modularized with sections being assembled off-site and brought to the site on trucks as complete process units. Surface disturbance associated with the Boardman Project would be minimal, and would be adjacent to areas already disturbed due to the Core Facility construction.

The combined facility would produce ethanol at a rate of 250,000 gallons per year (gpy) from 10 BDT per day of cellulosic materials consisting primarily of hybrid poplar wood chips from a nearby tree farm. Switchgrass and sorghum campaigns are also planned.

Utilities that would otherwise support the Core Facility will be adequate to supply the DOE funded portions of the project as well. Supplies of water, electricity, natural gas and wastewater disposal are all within the capacity of the providers without modification.

ZeaChem has consulted with the Oregon SHPO. The SHPO concurs that there will be no impact to cultural resources as a result of the combined projects.

The site is not within the 100 year floodplain and contains no wetlands. The previously disturbed site would not provide wildlife habitat. Per USFWS, are no threatened or endangered species found in Morrow County. Vehicle access to the Boardman Project site would be via Rail Loop Drive, a two-lane asphalt road designed by the Port of Morrow to accommodate industrial traffic within the Port's industrial park. The roads in the industrial park acan accommodate additional traffic created by the Boardman Project.

The duration of the Boardman Project is three years, with an engineering, procurement and construction period of 14 months, and an operational period of 22 months. After the completion of the operational phase, the most likely option for decommissioning is to re-purpose the facility for the production of bio-based propylene under an agreement with private (non-federal) investors.

The Boardman Project constitutes a small-scale pilot project and will include construction within and contiguous to an already developed area where utilities and currently used roads are readily accessible. Therefore CX B3.6 applies. The project also includes final design tasks and project management activities. Therefore CX A9 also applies.

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

Note to Specialist :

None Given.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: *Kymber Kern*
NEPA Compliance Officer

Date: 10/14/2010

FIELD OFFICE MANAGER DETERMINATION

Field Office Manager review required

NCO REQUESTS THE FIELD OFFICE MANAGER REVIEW FOR THE FOLLOWING REASON:

- Proposed action fits within a categorical exclusion but involves a high profile or controversial issue that warrants Field Office Manager's attention.
- Proposed action falls within an EA or EIS category and therefore requires Field Office Manager's review and determination.

BASED ON MY REVIEW I CONCUR WITH THE DETERMINATION OF THE NCO :

Field Office Manager's Signature: _____
Field Office Manager

Date: _____



Oregon

John A. Kitzhaber, MD, Governor

Department of Environmental Quality
Headquarters
811 SW Sixth Avenue
Portland, OR 97204-1390
(503) 229-5696
FAX (503) 229-6124
TTY 711

April 12, 2011

The Honorable Tom Vilsack
Secretary of Agriculture
U.S. Department of Agriculture
1400 Independence Ave, SW
Washington, DC 20250

Dear Secretary Vilsack,

On behalf of the Oregon Department of Environmental Quality (DEQ), please accept this letter in strong support of ZeaChem Inc.'s application for a USDA Biorefinery Assistance Guaranteed Loan (Sec. 9003) for its first commercial scale cellulosic biorefinery.

DEQ is very pleased that ZeaChem has chosen to deploy its advanced biofuels technology in Oregon, which will help the state achieve its greenhouse gas emissions reduction goals, diversify its transportation fuel supply and develop its markets for biomass.

ZeaChem has been an active industry contributor to promote the use of locally available renewable biomass and accelerate in-state production of low carbon, economical fuels. DEQ staff has worked with ZeaChem to create a unique carbon intensity pathway that takes into account ZeaChem's use of sustainable, Oregon biomass resources for the production of advanced biofuels. To my knowledge, ZeaChem's commercial biorefinery in Boardman will be the first commercial scale advanced biofuels production facility in Oregon and will lead the way toward achieving our state's climate change targets.

DEQ welcomes ZeaChem's investment in Oregon that will establish the state as a leader in the production of advanced biofuels utilizing Oregon's abundant biomass resources. I encourage the USDA's fair consideration and full support of this loan guarantee for this valuable Oregon project.

Sincerely,

Dick Pedersen
Director

From: GINSBURG Andy [GINSBURG.Andy@deq.state.or.us]
Sent: Monday, August 08, 2011 8:44 PM
To: Goode, Annie - Washinton, DC
Cc: Bochicchio, Juliet - Washington, DC; MULLANE Neil; HAYES-GORMAN Linda
Subject: RE: ZeaChem Preliminary Notice
Attachments: 4.12.11 ZeaChem Support Ltr.pdf

Dear Ms. Goode,

Thanks for asking for our input on ZeaChem's proposal for a loan guarantee. As you can see from the attached letter, our agency supports ZeaChem's proposal because the plant will produce low carbon fuels that will help us meet our greenhouse gas reduction goals, diversify our transportation fuel supply and develop markets for Oregon's biomass resources.

As you note, we anticipate receiving permit applications for the facility should the project move forward. While we have no comments on potential air or water quality impacts at this time, we will ensure that the facility complies with all EPA and Oregon DEQ requirements before issuing construction and operating permits.

Thanks again for checking with us.

Andy Ginsburg (DEQ Air Quality) and Neil Mullane (DEQ Water Quality)

Andy Ginsburg
 Air Quality Administrator
 Oregon Department of Environmental Quality
 (503) 229-5397 - Office
 (503) 572-7195 - Mobile

From: Goode, Annie - Washinton, DC [<mailto:Annie.Goode@wdc.usda.gov>]
Sent: Tuesday, August 02, 2011 12:05 PM
To: GINSBURG Andy
Cc: Bochicchio, Juliet - Washington, DC
Subject: ZeaChem Preliminary Notice

Dear Mr. Ginsburg:

USDA/Rural Development is considering a proposal for a loan guarantee from ZeaChem Boardman, LLC for a biorefinery project in Boardman, OR. We are conducting an environmental assessment of this proposal, pursuant to the National Environmental Policy Act (NEPA). Your agency is likely to receive permit applications in the future, and we appreciate any comments you may have at this time.

Please find attached a preliminary notice of USDA/Rural Development's review of this proposal, along with an executive summary of the proposal and several site maps (hard copy to follow by mail). Please provide any comments you may have on potential air quality impacts of this project within 30 days.

Do not hesitate to contact me or Juliet Bochicchio (202.205.8242) for any additional information that you may need.

Thanks very much,

Annie

Annie Eberhart Goode | Environmental Protection Specialist
Rural Development
U.S. Department of Agriculture
1400 Independence Ave., S.W. | Washington, D.C. 20250
Phone: 202.720.9653 | Fax: 202.690.4335
www.rurdev.usda.gov

"Committed to the future of rural communities"

"Estamos dedicados al futuro de las comunidades rurales"



**United States Department of Agriculture
Rural Development**

August 3, 2011

Andy Ginsburg, Administrator
Air Quality Division
Oregon Department of Environmental Quality
811 SW Sixth Avenue
Portland, OR 97204-1390

Dear Mr. Ginsburg:

USDA/Rural Development is considering a proposal for a loan guarantee for a biorefinery project in Boardman, OR. I provided these materials electronically on August 2, 2011 and, per my email, am attaching hardcopy for your review.

Please do not hesitate to contact me (202.720.9653) or Juliet Bochicchio (202.205.8242) if you or your staff have additional questions about this proposal.

Sincerely,

A handwritten signature in black ink, appearing to read "Annie Eberhart Goode".

Annie Eberhart Goode
Environmental Protection Specialist
USDA/Rural Development

ATTACHMENTS

1400 Independence Ave. S.W. - Washington DC 20250-0700
Web: <http://www.rurdev.usda.gov>

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1400 Independence Avenue, S.W., Washington, DC 20250-9410 or call (800) 795-3272 (Voice) or (202) 720-6382 (TDD).

Goode, Annie - Washinton, DC

From: Goode, Annie - Washinton, DC
Sent: Tuesday, August 02, 2011 3:04 PM
To: 'Ginsburg.andy@deq.state.or.us'
Cc: Bochicchio, Juliet - Washington, DC
Subject: ZeaChem Preliminary Notice
Attachments: 4 site maps FINAL.pdf; Executive Summary ZeaChem Biorefinery.docx; ZeaChem Preliminary Notice 070611.doc

Dear Mr. Ginsburg:

USDA/Rural Development is considering a proposal for a loan guarantee from ZeaChem Boardman, LLC for a biorefinery project in Boardman, OR. We are conducting an environmental assessment of this proposal, pursuant to the National Environmental Policy Act (NEPA). Your agency is likely to receive permit applications in the future, and we appreciate any comments you may have at this time.

Please find attached a preliminary notice of USDA/Rural Development's review of this proposal, along with an executive summary of the proposal and several site maps (hard copy to follow by mail). Please provide any comments you may have on potential air quality impacts of this project within 30 days.

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Thanks very much,

Annie

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**United States Department of Agriculture
Rural Development**

August 3, 2011

Neil Mullane, Administrator
Water Quality Division
Oregon Department of Environmental Quality
811 SW Sixth Avenue
Portland, OR 97204-1390

Dear Mr. Mullane:

USDA/Rural Development is considering a proposal for a loan guarantee for a biorefinery project in Boardman, OR. I provided these materials electronically on August 2, 2011 and, per my email, am attaching hardcopy for your review.

Please do not hesitate to contact me (202.720.9653) or Juliet Bochicchio (202.205.8242) if you or your staff have additional questions about this proposal.

Sincerely,

A handwritten signature in black ink, appearing to read "Annie Goode".

Annie Eberhart Goode
Environmental Protection Specialist
USDA/Rural Development

ATTACHMENTS

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Goode, Annie - Washinton, DC

From: Goode, Annie - Washinton, DC
Sent: Tuesday, August 02, 2011 3:05 PM
To: 'Mullane.neil@deq.state.or.us'
Subject: ZeaChem Preliminary Notice
Attachments: 4 site maps FINAL.pdf; Executive Summary ZeaChem Biorefinery.docx; ZeaChem Preliminary Notice 070611.doc

Dear Mr. Mullane:

USDA/Rural Development is considering a proposal for a loan guarantee from ZeaChem Boardman, LLC for a biorefinery project in Boardman, OR. We are conducting an environmental assessment of this proposal, pursuant to the National Environmental Policy Act (NEPA). Your agency is likely to receive permit applications in the future, and we appreciate any comments you may have at this time.

Please find attached a preliminary notice of USDA/Rural Development's review of this proposal, along with an executive summary of the proposal and several site maps (hard copy to follow by mail). Please provide any comments you may have on potential air quality impacts of this project within 30 days.

Do not hesitate to contact me or Juliet Bochicchio (202.205.8242) for any additional information that you may need.

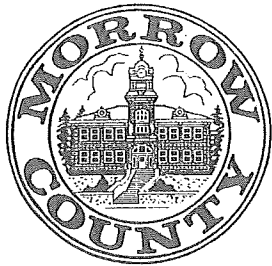
Thanks very much,

Annie

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PLANNING DEPARTMENT

P. O. Box 40 • Irrigon, Oregon 97844
(541) 922-4624 or (541) 676-9061 x 5503
FAX: (541) 922-3472

August 1, 2011

Juliet Bochicchio, Environmental Protection Specialist
Rural Development, USDA
Rural Business-Cooperative Service, Program Support Staff
1400 Independence Avenue SW, MS 0761
Washington, D.C. 20250

RE: ZeaChem Biorefinery
Intergovernmental Review

Dear Ms. Bochicchio:

This letter is in response to your July 6, 2011, letter requesting input from Morrow County concerning ZeaChem and their proposed installation at the Port of Morrow. You posed eight questions which I will list below (in italics) with answers (in regular type).

1. *Consistency with State and local government planning goals;*

The area of the current ZeaChem demonstration plant and the proposed commercial facility is on land that is currently planned Industrial and zoned Port Industrial. An activity such as is proposed by ZeaChem is appropriate in this area as it is not near the City of Boardman or any residentially zoned properties. No exceptions or additional Comprehensive Plan or Zoning amendments or other type of action is required of ZeaChem. Prior to beginning construction activities on the site they will need to obtain a Zoning Permit as required by the Morrow County Zoning Ordinance Article 4 Section 4.165 to review for Site Design requirements. Building and related Permits will also be required.

2. *Extent to which the proposal duplicates, runs counter to, or needs to be coordinated with other activities, or might be revised to increase its effectiveness;*

Currently sited at the Port of Morrow adjacent to the proposed ZeaChem facility is Pacific Ethanol. These two facilities will create a synergy and will allow better utilization of current industrial improvements. Morrow County would not review based on this standard.

3. *Contribution to achieving State or local government goals relating to natural and human resources, or economic and community development;*

Without a comprehensive review the development of the ZeaChem facility positively addresses several policy statements within the Morrow County Comprehensive Plan. If you need specifics, please advise.

4. *Extent of environmental impacts and alternatives that should be considered in the Agency's environmental review;*

Morrow County would defer to the Oregon Department of Environmental Quality for any necessary permits. The types of permits that may be pertinent include and air quality permit and permits under National Pollutant Discharge Elimination System (NPDES) requirements.

5. *Influence on area growth or delivery of services, including any disproportionate effects on minority groups;*

They only review under this criterion that Morrow County may be concerned with are impacts to the transportation network. Necessary review would be triggered by a daily traffic count at the facility of 400 passenger car equivalents. Currently the Port of Morrow is conducting two Interchange Area Management Plans that will further refine the Morrow County Transportation System Plan for the Port of Morrow and the Interstate 84/Highway 730 Interchanges. Future traffic volumes based on industrial level of development are being utilized and should be sufficient for the ZeaChem development.

6. *Impacts on energy resource supply and demand;*

The Morrow County Comprehensive Plan and Oregon statewide planning goal 13 address energy. Morrow County has not adopted specific review requirements.

7. *Possible displacement of people or businesses; and*

The location of the proposed facility is bare land. No displacement of people or businesses is anticipated.

8. *Location in a Coastal Zone or Coastal Barrier Resource Area and consistency with any State coastal management plan.*

Boardman and the Port of Morrow, while along the Columbia River, are not located in a Coastal Zone as defined by Oregon law.

Please let me know if you have any additional questions. I can be reached at the number on the letterhead or by email at cmclane@co.morrow.or.us.

Cordially,


Carla McLane, MBA
Planning Director

cc: Joe Regnery, ZeaChem



**United States Department of Agriculture
Rural Development**

Rural Business-Cooperative Service, Program Support Staff
1400 Independence Avenue, SW
Stop 0761, Room 6900
Washington, DC 20250

July 6, 2011

Carla McLane, Planning Director
Morrow County
P.O. Box 40
Irrigon OR 97844

**Subject: Intergovernmental Review
Review of Proposed ZeaChem Biorefinery**

Dear Ms. McLane,

We are initiating the Executive Order 12372, "Intergovernmental Review of Federal Programs" process on behalf of the U.S. Department of Agriculture, Rural Development, Rural Business-Cooperative Service (RBCS). The Agency is being asked to consider providing financial assistance for the proposal described below and your comments are invited on this proposal regarding

- 1) Consistency with State and local government planning goals;
- 2) Extent to which the proposal duplicates, runs counter to, or needs to be coordinated with other activities, or might be revised to increase its effectiveness;
- 3) Contribution to achieving State or local government goals relating to natural and human resources, or economic and community development;
- 4) Extent of environmental impacts and alternatives that should be considered in the Agency's environmental review;
- 5) Influence on area growth or delivery of services, including any disproportionate effects on minority groups;
- 6) Impacts on energy resource supply and demand;
- 7) Possible displacement of people or businesses; and
- 8) Location in a Coastal Zone or Coastal Barrier Resource Area and consistency with any State coastal management plan.

If you choose not to respond within 60 days of this correspondence, the Agency will assume that you have chosen not to respond and may proceed with a decision on this proposal. Please feel free to contact me with any comments or questions at juliet.bochicchio@wdc.usda.gov or at 202.205.8242. Thank you for

Committed to the future of rural communities.

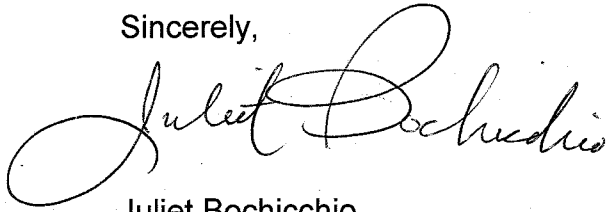
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To file a complaint of discrimination write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call (202) 720-5964 (voice or TDD).

Carla McLane, County of Morrow
July 6, 2011
Page 2.

forwarding all correspondence to me via email or to my attention at the address above.

Sincerely,



Juliet Bochicchio
Environmental Protection Specialist

cc: Jeff Deiss, USDA RBCS
Anthony Ashby, USDA RBCS

Attachments: 1) Project Description
 2) General vicinity map
 3) Aerial Photograph with Project Location

Rural Development
U.S. Department of Agriculture
Rural Business-Cooperative Service, Program Support Staff
1400 Independence Ave., S.W. | Washington, D.C. 20250
Mail Stop 0761
Phone: 202.720.9653 | Fax: 202.690.4335
www.rurdev.usda.gov

Generalized Project Description
Proposed Cellulosic Biorefinery
ZeaChem
Boardman, Oregon
July 2011

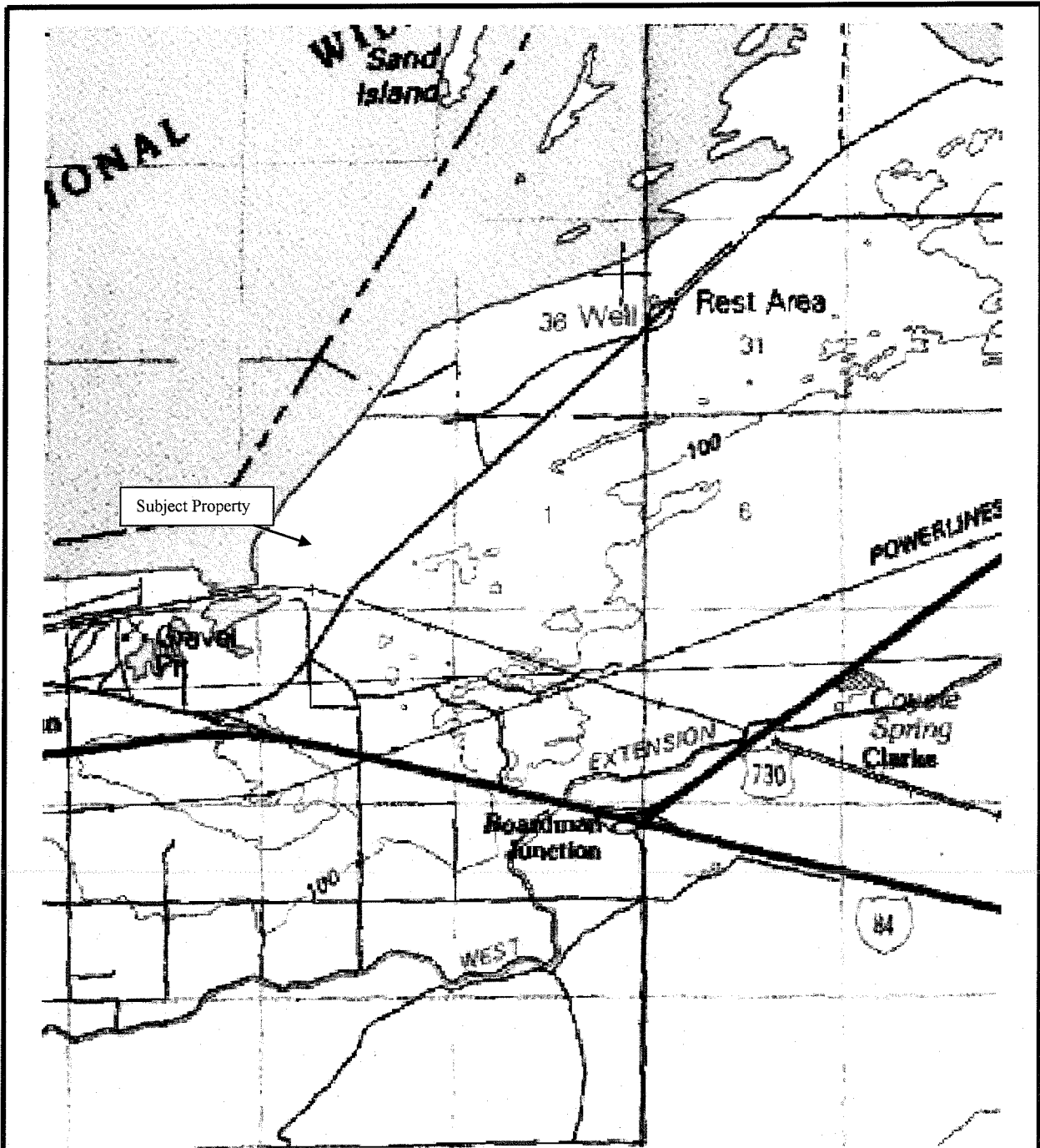
The USDA, Rural Development, Rural Business-Cooperative Service (RBCS) is considering an application for loan guarantee pursuant to Section 9003 of the Food, Conservation, and Energy Act of 2008 received from Silicon Valley Bank for ZeaChem, LLC to construct and operate a Cellulosic Biorefinery to be located outside of the city of Boardman, Morrow County, Oregon. The proposal would include the construction of the biorefinery and its related infrastructure to be located on approximately 25 acres of land located within an existing Industrial Park identified as the Port of Morrow located just outside of Boardman, Oregon. The proposed site is directly adjacent to ZeaChem's 250,000 gallon per year integrated Demonstration Plant. The site is zoned for heavy industry use and is supported with industrial scale utilities. The Port of Morrow Industrial Park is a designated enterprise zone that hosts multiple commercial and industrial facilities with levels of traffic anticipated. The site is serviced by barge load out docks on the Columbia River, existing rail loop facilities connected to the neighboring UP main line and existing Interstate Highway 84 interconnections.

The subject property is located on an undeveloped 25 acre parcel of land approximately ¼ -mile by paved road west from Columbia Avenue on Rail Loop Drive. Lewis and Clark Drive also enters the area westerly from Columbia Avenue and form a circular drive where it meets Rail Loop Drive through the north-westerly portion of the East Beach Industrial Park. The subject property is entirely surrounded by either undeveloped parent parcel or developed industrial properties.

The purpose of the proposed biorefinery is to produce advanced biofuels and bio-based chemicals that will contribute to meeting the requirements of the Renewable Fuel Standard established in the Energy Independence and Security Act of 2007. The biorefinery proposes the use of approximately 225,000 bone dry tons/year (BDT/year) of cellulosic biomass to produce 25,000,000 gallons per year of biobased fuels and chemicals. **Attachments 2 and 3** show the location of the proposed facility.

The source of the cellulosic biomass is proposed from Greenwood Tree Farm which will supply 70 percent (hogfuel) of the feedstock requirements and Oregon hay will supply the other 30 percent (wheat straw).

Historically, the subject property has been used for agriculture and more recently an industrial park. Infrastructure, including water, sewer, electricity, and natural gas, are available within the proposed biorefinery location. The main method of transportation for feedstock supply will be by truck, using existing roads and highways. The main method of transportation for fuel off-take will be piping to the existing ethanol facility and transport via barge. The number of feedstock trucks and product off-take barges is not expected to cause a major safety concern or require any additional traffic control devices.

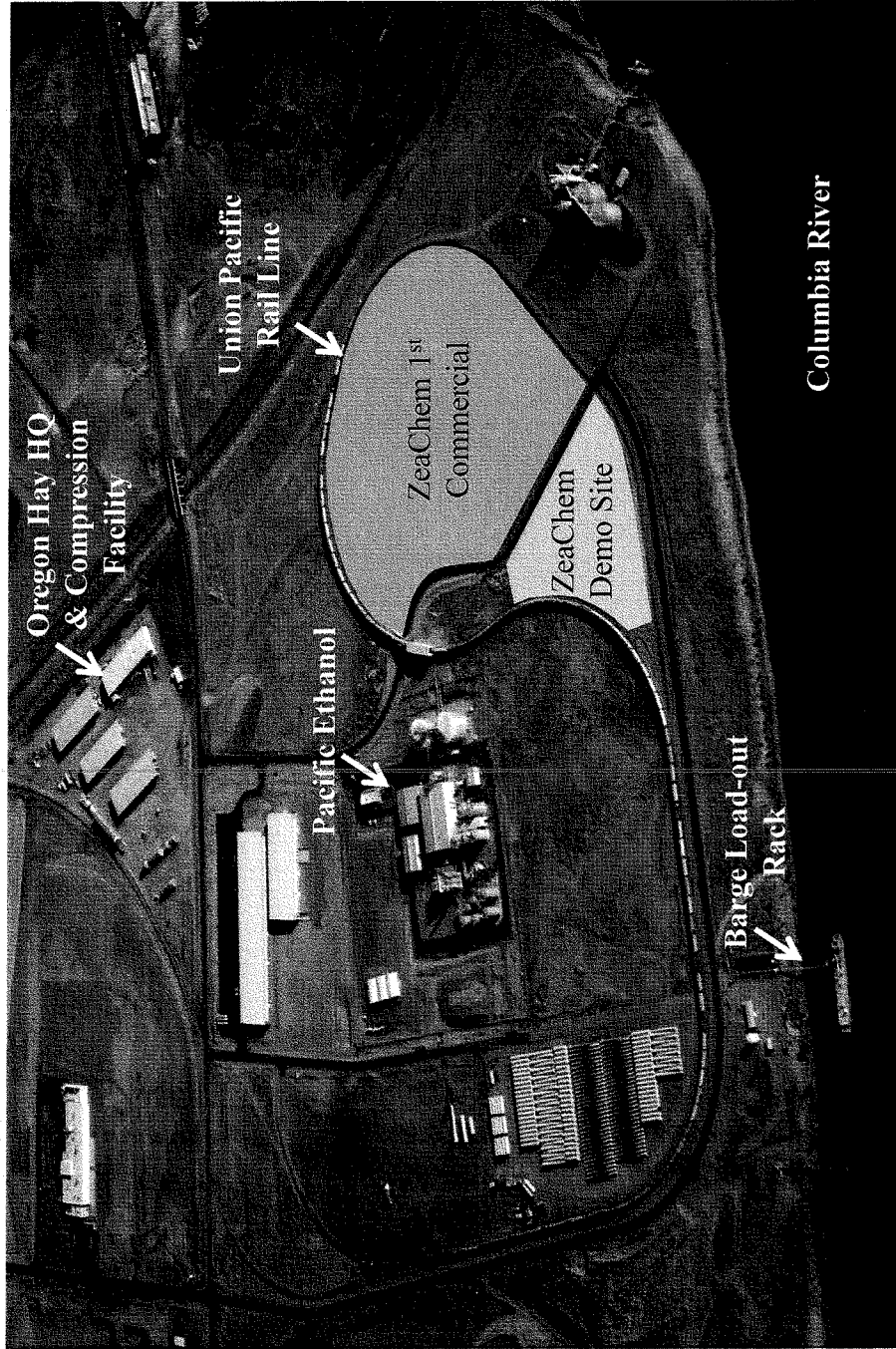


NORTH



<i>Eagle River Development, LLC</i>	
<i>Topographic Location Map Port of Morrow Site: ZEA CHEM (SW1/4, S.2, T4N, R25E W.M., Boardman, OR Quad 1993)</i>	
<i>Provided by: ERDLLC</i>	<i>Date: February 2011</i>
<i>ERDLLC#: 2201E</i>	<i>Exhibit: 2</i>

ZeaChem Biorefinery Location



- Located at the Port of Morrow, in Boardman, OR, ZeaChem's demo and first commercial biorefinery sites are on the Columbia River next to the barge dock, within the UP rail loop, and across the road from OR Hay.



**United States Department of Agriculture
Rural Development**

Rural Business-Cooperative Service, Program Support Staff
1400 Independence Avenue, SW
Stop 0761, Room 6900
Washington, DC 20250

July 6, 2011

Barry Beyeler
City of Boardman
PO Box 229
Boardman, Oregon 97818

Subject: Intergovernmental Review
Review of Proposed ZeaChem Biorefinery

Dear Mr. Beyeler,

We are initiating the Executive Order 12372, "Intergovernmental Review of Federal Programs" process on behalf of the U.S. Department of Agriculture, Rural Development, Rural Business-Cooperative Service (RBCS). The Agency is being asked to consider providing financial assistance for the proposal described below and your comments are invited on this proposal regarding

- 1) Consistency with State and local government planning goals;
- 2) Extent to which the proposal duplicates, runs counter to, or needs to be coordinated with other activities, or might be revised to increase its effectiveness;
- 3) Contribution to achieving State or local government goals relating to natural and human resources, or economic and community development;
- 4) Extent of environmental impacts and alternatives that should be considered in the Agency's environmental review;
- 5) Influence on area growth or delivery of services, including any disproportionate effects on minority groups;
- 6) Impacts on energy resource supply and demand;
- 7) Possible displacement of people or businesses; and
- 8) Location in a Coastal Zone or Coastal Barrier Resource Area and consistency with any State coastal management plan.

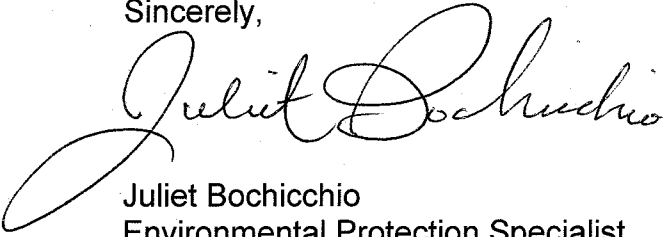
If you choose not to respond within 60 days of this correspondence, the Agency will assume that you have chosen not to respond and may proceed with a decision on this proposal. Please feel free to contact me with any comments or questions at juliet.bochicchio@wdc.usda.gov or at 202.205.8242. Thank you for forwarding all correspondence to me via email or to my attention at the address above.

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"USDA is an equal opportunity provider, employer and lender."
To file a complaint of discrimination write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call (202) 720-5964 (voice or TDD).

Barry Beyeler, City of Boardman
July 6, 2011
Page 2.

Sincerely,



Juliet Bochicchio
Environmental Protection Specialist

cc: Jeff Deiss, USDA RBCS
Anthony Ashby, USDA RBCS

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 3) Aerial Photograph with Project Location

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U.S. Department of Agriculture
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Generalized Project Description
Proposed Cellulosic Biorefinery
ZeaChem
Boardman, Oregon
July 2011

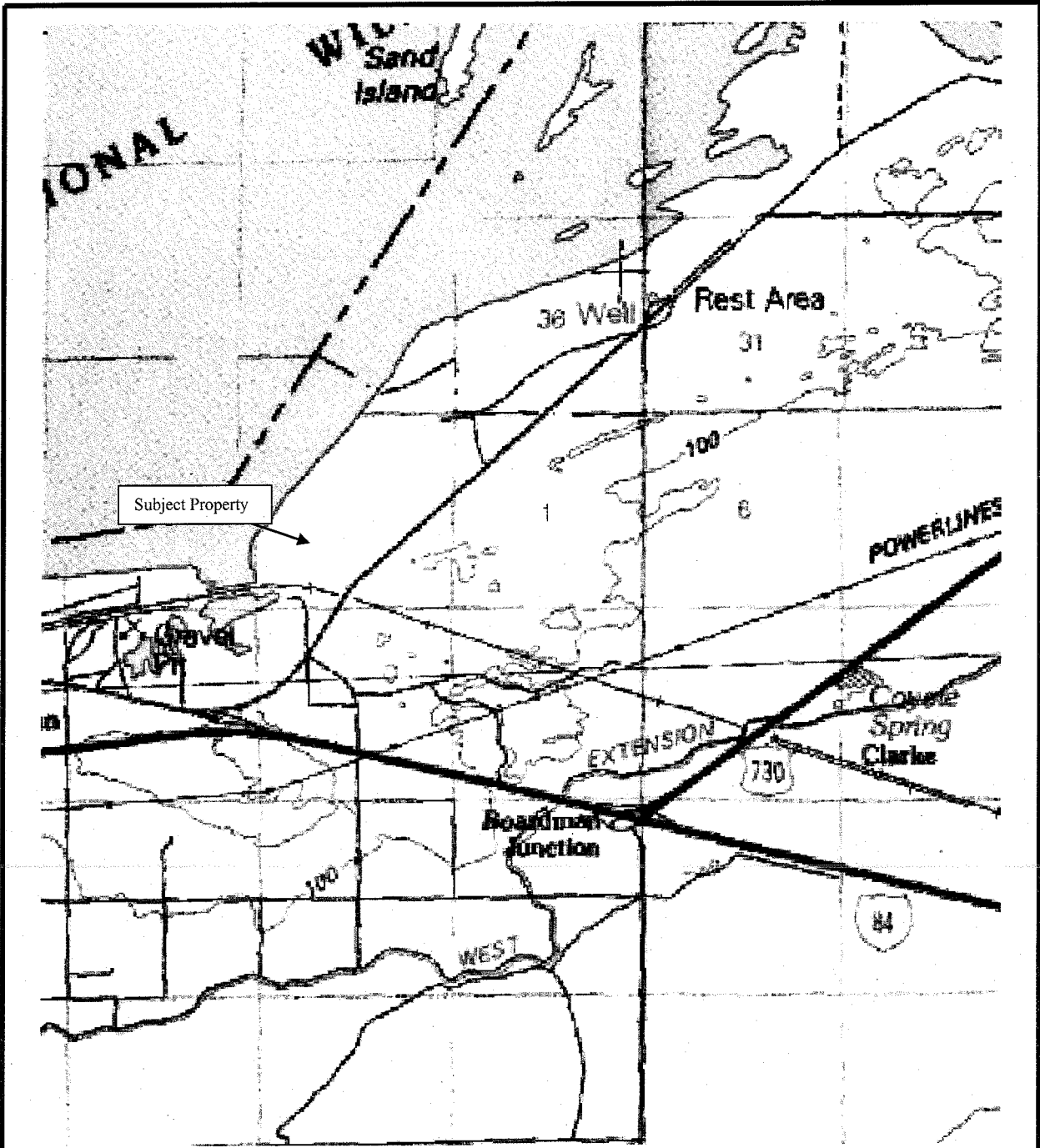
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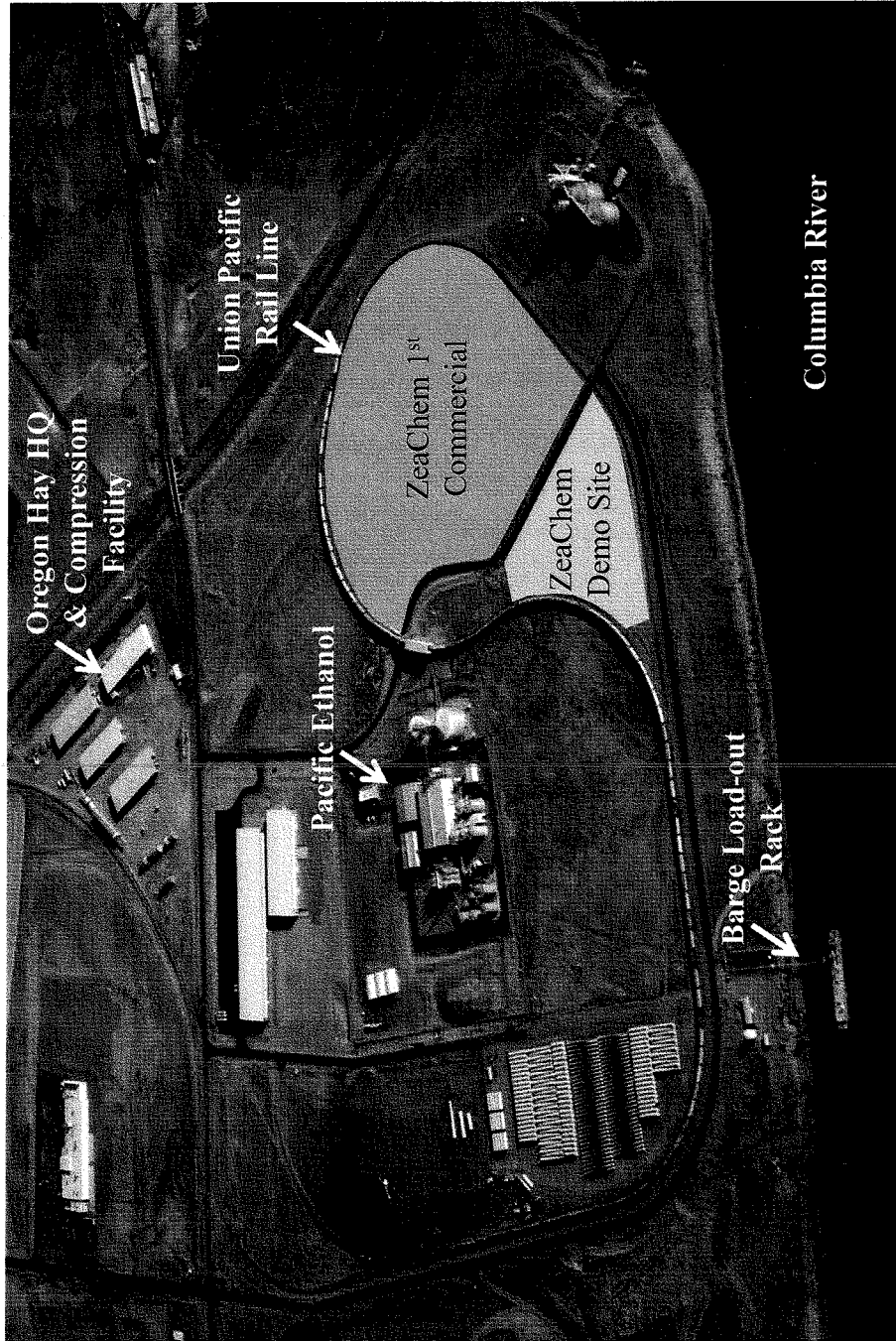


NORTH



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Laura Cutbirth

From: Suzanne_Anderson@fws.gov
Sent: Thursday, June 02, 2011 2:54 PM
To: Laura Cutbirth
Cc: Gary_Miller@fws.gov
Subject: Re: ZeaChem Boardman Biorefinery/ Port of Morrow Biorefinery

Thank you for your timely response and for the opportunity to review and comment on your environmental assessment (EA) of May 5, 2011, containing the cellulosic biorefinery in Boardman, Oregon. Based on the information provided in the EA, we support your findings that no concerns have been identified in relation to the project and that no listed species occur in the action area of the project. No further information or additional process is necessary at this time. Please call if you have any questions. thanks. suz.

Suzanne Anderson
USFWS - La Grande Office
3502 Hwy 30, La Grande OR. 97850
(541) 962-8583
Fax (541) 862-8581
suzanne_anderson@fws.gov

Laura Cutbirth <laura@westartrade.com>

To "suzanne_anderson@fws.gov" <suzanne_anderson@fws.gov>

cc Cindy Thyfault <Cindy@westartrade.com>, Angela Conway
<Angela@westartrade.com>, Wesley Willcox <Wesley@westartrade.com>

Subject ZeaChem Boardman Biorefinery/ Port of Morrow Biorefinery

05/24/2011 01:14 PM

Ms. Anderson,

Thank you for your phone call earlier. Let me further clarify the project and please let me know if this does not answer your initial question regarding native and non-native feedstock growth.

Firstly, ZeaChem Boardman Biorefinery will not be growing any feedstock. They will purchase their feedstock from two suppliers. The first supplier is Greenwood Tree Farm Fund, LP (GTFF) and will be supplying 70% of the feedstock. GTFF will be supplying Mill Hogfuel which is ground or chipped hybrid poplar tree limbs, branches, and/or leaves, that are gathered in the field and brought to a central processor. The second supplier is Oregon Hay Products Inc. whom will be supplying the other 30% of the feedstock needed. This feedstock will be corn stover and wheat straw.

Secondly, the term cellulosic biomass refers to any type of plant material. The actual feedstock agreement contains confidential language that is not allowed to be released without both parties consent. If the information I provided is not sufficient, please let me know so I may consult with the parties herein regarding the release of the feedstock agreement.

Thank you and let me know if you have any further questions.

Sincerely,

Laura Cutbirth

Laura Cutbirth

Project Specialist
Westar Trade Resources

2030 Main St., Suite 410
Dallas, TX 75201
214-320-0900
214-320-0909 Fax
www.westartrade.com

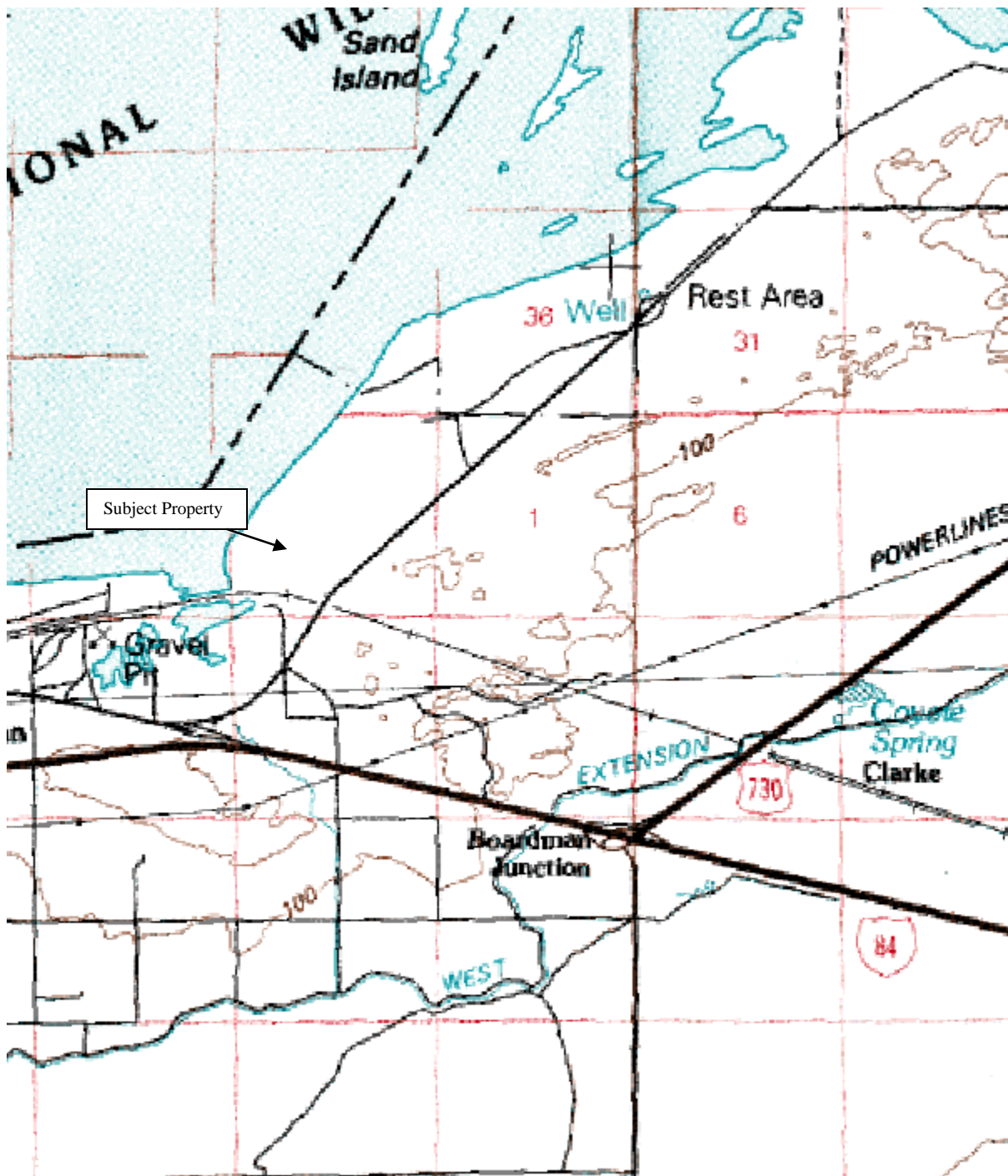
Building the bridge from where you are . .
to where you want to be.

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Checked by AVG - www.avg.com

Version: 10.0.1375 / Virus Database: 1511/3675 - Release Date: 06/02/11



NORTH



Eagle River Development, LLC

*Topographic Location Map
 Port of Morrow Site: ZEA CHEM
 (SW1/4, S.2, T4N, R25E W.M., Boardman, OR Quad 1993)*

Provided by: ERDLLC

Date: February 2011

ERDLLC#: 2201E

Exhibit: 2



United States Department of Agriculture
Rural Development
Rural Business-Cooperative Service, Program Support Staff
1400 Independence Avenue, SW
Stop 0761, Room 6900
Washington, DC 20250

August 1, 2011

Suzanne Anderson
USDOI Fish and Wildlife Service
La Grande Office
3502 Hwy 30
La Grande, OR 97850

Subject: Section 7 Review of ZeaChem Boardman Biorefinery, LLC
Morrow County, OR

Dear Ms. Anderson,

The U.S. Department of Agriculture, Rural Business-Cooperative Service (RBS), is reviewing an application from ZeaChem Boardman Biorefinery, LLC (ZeaChem) for federal funding for new construction and operation of a 25 million gallon per year commercial scale Cellulosic Biorefinery in Boardman Oregon. The funding would allow ZeaChem to construct a new cellulosic biorefinery and related infrastructure to be located on 25 acres within Census Tract 41049970100 within the Port of Morrow Enterprise Zone, Morrow County, OR near the town of Boardman (Attachment 1). The subject property is located on undeveloped land approximately ¼ -mile by paved road west from Columbia Avenue on Rail Loop Drive at address 71099 Rail Loop Drive, Boardman, OR 97818 (Attachment 2).

The USFWS has reviewed this proposal and responded that USFWS supports the finding that no USFWS concerns have been identified in relation to the project and that no federally threatened or endangered listed species occur in the action area of the project in an email response dated June 2, 2011 (Attachment 3).

RBS has made a determination under Section 7 of the ESA that this project poses no affect to federally threatened or endangered species or their critical habitat. RBS bases this determination on consultation with your office, and a review of the county listed species which indicated no listed species or critical habitat is present. The project is proposed on land that is currently in fallow field within a railroad loop.

Please feel free to contact me with any comments or questions at juliet.bochicchio@wdc.usda.gov or at 202.205.8242.

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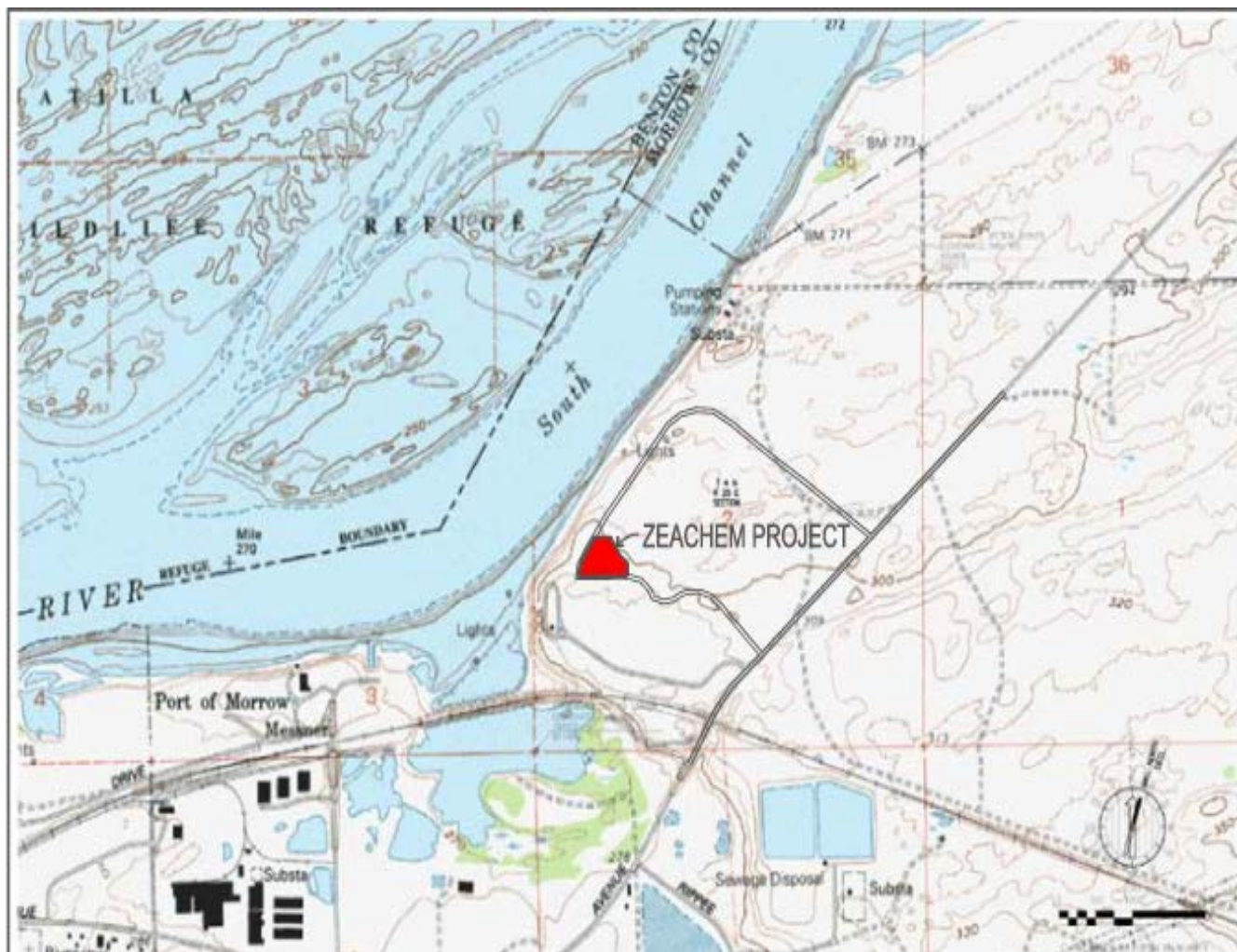
A handwritten signature in blue ink that reads "Juliet Bochicchio". The signature is written in a cursive style with a large, looping initial "J".

Juliet C. Bochicchio
Environmental Protection Specialist
Rural Business-Cooperative Service, Program Support Staff

cc: Joe Regnery, ZeaChem

- Attachments:
1. USGS Map showing location of the undertaking
 2. General vicinity map
 3. June 2, 2011 email from USFWS

Figure 2: Area Map





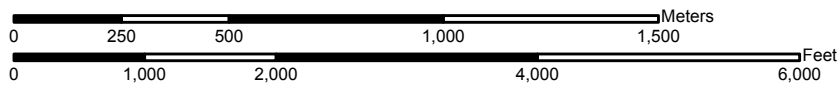
PROPOSED ZEACHEM 25 ACRE PROPERTY

APPENDIX II

Soil Map—Benton County Area, Washington, and Morrow County, Oregon
(ZeaChem Proposed Site and Surrounding Area)




Map Scale: 1:18,200 if printed on A size (8.5" x 11") sheet.



Soil Map—Benton County Area, Washington, and Morrow County, Oregon
(ZeaChem Proposed Site and Surrounding Area)

MAP LEGEND






















Area of Interest (AOI)


 Area of Interest (AOI)

Soils

 Soil Map Units

Special Point Features




-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot
-  Spoil Area
-  Stony Spot

 Very Stony Spot

 Wet Spot

 Other


Special Line Features

-  Gully
-  Short Steep Slope
-  Other






Political Features

 Cities

Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

MAP INFORMATION

Map Scale: 1:18,200 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at scales ranging from 1:20,000 to 1:24,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: UTM Zone 11N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Benton County Area, Washington
Survey Area Data: Version 7, Jun 10, 2009

Soil Survey Area: Morrow County, Oregon
Survey Area Data: Version 7, Feb 8, 2010

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

Date(s) aerial images were photographed: 7/1/2006

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Benton County Area, Washington (WA605)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
W	Water	163.9	13.2%
Subtotals for Soil Survey Area		163.9	13.2%
Totals for Area of Interest		1,245.5	100.0%

Morrow County, Oregon (OR049)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
8B	Burbank loamy fine sand, 2 to 5 percent slopes	88.9	7.1%
40C	Quincy loamy fine sand, 2 to 12 percent slopes	731.1	58.7%
W	Water	261.6	21.0%
Subtotals for Soil Survey Area		1,081.6	86.8%
Totals for Area of Interest		1,245.5	100.0%

Prime and other Important Farmlands

Morrow County, Oregon

Map symbol	Map unit name	Farmland classification
1	Aquepts and Aquolls, nearly level	Farmland of statewide importance
5E	Boardtree loam, 7 to 40 percent slopes	Farmland of statewide importance
10B	Ellum fine sandy loam, 2 to 5 percent slopes	Farmland of statewide importance
10C	Ellum fine sandy loam, 5 to 12 percent slopes	Farmland of statewide importance
16C	Hall Ranch loam, 2 to 12 percent slopes	Farmland of statewide importance
17E	Hall Ranch gravelly loam, 12 to 35 percent slopes	Farmland of statewide importance
18E	Hankins silt loam, 5 to 35 percent south slopes	Farmland of statewide importance
19C	Helter silt loam, bedrock substratum, 3 to 15 percent slopes	Farmland of statewide importance
19E	Helter silt loam, bedrock substratum, 15 to 35 percent slopes	Farmland of statewide importance
20B	Hezel loamy fine sand, 2 to 5 percent slopes	Farmland of statewide importance
20C	Hezel loamy fine sand, 5 to 12 percent slopes	Farmland of statewide importance
21C	Irrigon fine sandy loam, 5 to 12 percent slopes	Farmland of statewide importance
23D	Klicker stony silt loam, 2 to 20 percent slopes	Farmland of statewide importance
24E	Klicker stony silt loam, 20 to 40 percent north slopes	Farmland of statewide importance
27E	Labuck loam, 5 to 35 percent slopes	Farmland of statewide importance
30C	Mikkalo silt loam, 7 to 12 percent slopes	Farmland of statewide importance
30D	Mikkalo silt loam, 12 to 20 percent slopes	Farmland of statewide importance
31C	Morrow silt loam, 7 to 12 percent slopes	Farmland of statewide importance
32D	Morrow silt loam, 12 to 20 percent north slopes	Farmland of statewide importance
32E	Morrow silt loam, 20 to 35 percent north slopes	Farmland of statewide importance
33D	Morrow silt loam, 12 to 20 percent south slopes	Farmland of statewide importance
33E	Morrow silt loam, 20 to 30 percent south slopes	Farmland of statewide importance
38D	Prosser-Rock outcrop complex, 1 to 20 percent slopes	Farmland of statewide importance
43B	Rhea silt loam, 1 to 7 percent slopes	Farmland of statewide importance
43C	Rhea silt loam, 7 to 12 percent slopes	Farmland of statewide importance
43D	Rhea silt loam, 12 to 20 percent slopes	Farmland of statewide importance
43E	Rhea silt loam, 20 to 35 percent slopes	Farmland of statewide importance
43F	Rhea silt loam, 35 to 50 percent slopes	Farmland of statewide importance
44C	Ritzville very fine sandy loam, 7 to 12 percent slopes	Farmland of statewide importance
44D	Ritzville very fine sandy loam, 12 to 25 percent slopes	Farmland of statewide importance
45C	Ritzville silt loam, 7 to 12 percent slopes	Farmland of statewide importance
45D	Ritzville silt loam, 12 to 20 percent slopes	Farmland of statewide importance
46E	Ritzville silt loam, 20 to 40 percent north slopes	Farmland of statewide importance
47E	Ritzville silt loam, 20 to 40 percent south slopes	Farmland of statewide importance
52C	Royal fine sandy loam, 5 to 12 percent slopes	Farmland of statewide importance
52D	Royal fine sandy loam, 12 to 20 percent slopes	Farmland of statewide importance
54C	Sagehill fine sandy loam, 5 to 12 percent slopes	Farmland of statewide importance
54D	Sagehill fine sandy loam, 12 to 20 percent slopes	Farmland of statewide importance
55B	Sagehill fine sandy loam, hummocky, 2 to 5 percent slopes	Farmland of statewide importance
55C	Sagehill fine sandy loam, hummocky, 5 to 12 percent slopes	Farmland of statewide importance
58C	Taunton fine sandy loam, 5 to 12 percent slopes	Farmland of statewide importance
59B	Taunton fine sandy loam, hummocky, 0 to 5 percent slopes	Farmland of statewide importance
60C	Tolo silt loam, 3 to 15 percent slopes	Farmland of statewide importance
60E	Tolo silt loam, 15 to 35 percent slopes	Farmland of statewide importance
61E	Ukiah stony silty clay loam, 5 to 30 percent slopes	Farmland of statewide importance
62D	Utley loam, 8 to 20 percent slopes	Farmland of statewide importance
63C	Valby silt loam, 7 to 12 percent slopes	Farmland of statewide importance
64D	Valby silt loam, 12 to 20 percent north slopes	Farmland of statewide importance
65D	Valby silt loam, 12 to 20 percent south slopes	Farmland of statewide importance

Prime and other Important Farmlands

Morrow County, Oregon

Map symbol	Map unit name	Farmland classification
65E	Valby silt loam, 20 to 30 percent south slopes	Farmland of statewide importance
66B	Waha silt loam, 1 to 7 percent slopes	Farmland of statewide importance
67D	Waha silt loam, 7 to 25 percent north slopes	Farmland of statewide importance
67E	Waha silt loam, 25 to 40 percent north slopes	Farmland of statewide importance
68D	Waha silt loam, 7 to 25 percent south slopes	Farmland of statewide importance
69D	Waha-Rockly complex, 2 to 20 percent slopes	Farmland of statewide importance
70C	Warden very fine sandy loam, 5 to 12 percent slopes	Farmland of statewide importance
70D	Warden very fine sandy loam, 12 to 20 percent slopes	Farmland of statewide importance
71C	Warden silt loam, 5 to 12 percent slopes	Farmland of statewide importance
71D	Warden silt loam, 12 to 20 percent slopes	Farmland of statewide importance
71E	Warden silt loam, 20 to 40 percent slopes	Farmland of statewide importance
72C	Warden silt loam, 3 to 12 percent slopes, eroded	Farmland of statewide importance
72D	Warden silt loam, 12 to 20 percent slopes, eroded	Farmland of statewide importance
75C	Willis silt loam, 5 to 12 percent slopes	Farmland of statewide importance
75D	Willis silt loam, 12 to 20 percent slopes	Farmland of statewide importance
78	Xeric Torriorthents, nearly level	Farmland of statewide importance
79D	McKay silt loam, 7 to 25 percent south slopes	Farmland of statewide importance
81D	Condon-Bakeoven complex, 2 to 20 percent slopes	Farmland of statewide importance
83D	Condon silt loam, 12 to 20 percent north slopes	Farmland of statewide importance
84A	Wanser loamy fine sand, 0 to 3 percent slopes	Farmland of statewide importance
85C	Condon silt loam, 7 to 12 percent slopes	Farmland of statewide importance
88C	Burke silt loam, 7 to 12 percent slopes	Farmland of statewide importance
90D	Olex gravelly silt loam, 5 to 20 percent slopes	Farmland of statewide importance
91E	Olex gravelly silt loam, 20 to 40 percent slopes	Farmland of statewide importance
11	Endersby fine sandy loam	Prime farmland if irrigated
12	Esquatzel silt loam	Prime farmland if irrigated
21B	Irrigon fine sandy loam, 2 to 5 percent slopes	Prime farmland if irrigated
22	Kimberly fine sandy loam	Prime farmland if irrigated
30B	Mikkalo silt loam, 2 to 7 percent slopes	Prime farmland if irrigated
31B	Morrow silt loam, 1 to 7 percent slopes	Prime farmland if irrigated
35	Onyx silt loam	Prime farmland if irrigated
36	Pedigo silt loam	Prime farmland if irrigated
37A	Prosser silt loam, 0 to 2 percent slopes	Prime farmland if irrigated
37B	Prosser silt loam, 2 to 7 percent slopes	Prime farmland if irrigated
44B	Ritzville very fine sandy loam, 2 to 7 percent slopes	Prime farmland if irrigated
45A	Ritzville silt loam, 0 to 2 percent slopes	Prime farmland if irrigated
45B	Ritzville silt loam, 2 to 7 percent slopes	Prime farmland if irrigated
52B	Royal fine sandy loam, 2 to 5 percent slopes	Prime farmland if irrigated
53A	Royal silt loam, 0 to 3 percent slopes	Prime farmland if irrigated
54B	Sagehill fine sandy loam, 2 to 5 percent slopes	Prime farmland if irrigated
57	Snow silt loam	Prime farmland if irrigated
58A	Taunton fine sandy loam, 0 to 2 percent slopes	Prime farmland if irrigated
58B	Taunton fine sandy loam, 2 to 5 percent slopes	Prime farmland if irrigated
63B	Valby silt loam, 1 to 7 percent slopes	Prime farmland if irrigated
70B	Warden very fine sandy loam, 2 to 5 percent slopes	Prime farmland if irrigated
71A	Warden silt loam, 0 to 2 percent slopes	Prime farmland if irrigated
71B	Warden silt loam, 2 to 5 percent slopes	Prime farmland if irrigated
75B	Willis silt loam, 2 to 5 percent slopes	Prime farmland if irrigated
82B	Condon silt loam, 1 to 7 percent slopes	Prime farmland if irrigated

Prime and other Important Farmlands

Morrow County, Oregon

Map symbol	Map unit name	Farmland classification
87	Mondovi silt loam, 0 to 3 percent slopes	Prime farmland if irrigated

Rural Development
Environmental Justice (EJ) and Civil Rights Impact Analysis (CRIA)
Certification

1. Applicant's name and proposed project description: ZeaChem LLC proposes construct and operate a cellulosic ethanol plant to create ethanol from forest residuals and ag residues.

2. Rural Development's loan/grant program/guarantee or other Agency action: RD provides a loan guarantee for the construction and operation of the biorefinery

3. Attach a map of the proposal's area of effect identifying location or EJ populations, location of the proposal, area of impact or

Attach results of EJ analysis from the Environmental Protection Agency's (EPAs) EnviroMapper with proposed project location and impact footprint delineated.

4. Does the applicant's proposal or Agency action directly, indirectly or cumulatively affect the quality and/or level of services provided to the community?

Yes No N/A

5. Is the applicant's proposal or Agency action likely to result in a change in the current land use patterns (types of land use, development densities, etc)?

Yes No N/A

6. Does a demographic analysis indicate the applicant's proposal or Agency's action may disproportionately affect a significant minority and/or low-income populations?

Yes No N/A

If answer is no, skip to item 12. If answer is yes, continue with items 7 through 12.

7. Identify, describe, and provide location of EJ population _____

8. If a disproportionate adverse affect is expected to impact an EJ population, identify type/level of public outreach implemented. _____

9. Identify disproportionately high and adverse impacts on EJ populations. _____

10. Are adverse impacts appreciably more severe or greater in magnitude than the adverse impacts expected on non-minority/low-income populations?

Yes No N/A

11. Are alternatives and/or mitigation required to avoid impacts to EJ populations?

Yes No N/A

If yes, describe _____

12. I certify that I have reviewed the appropriate documentation and have determined that:

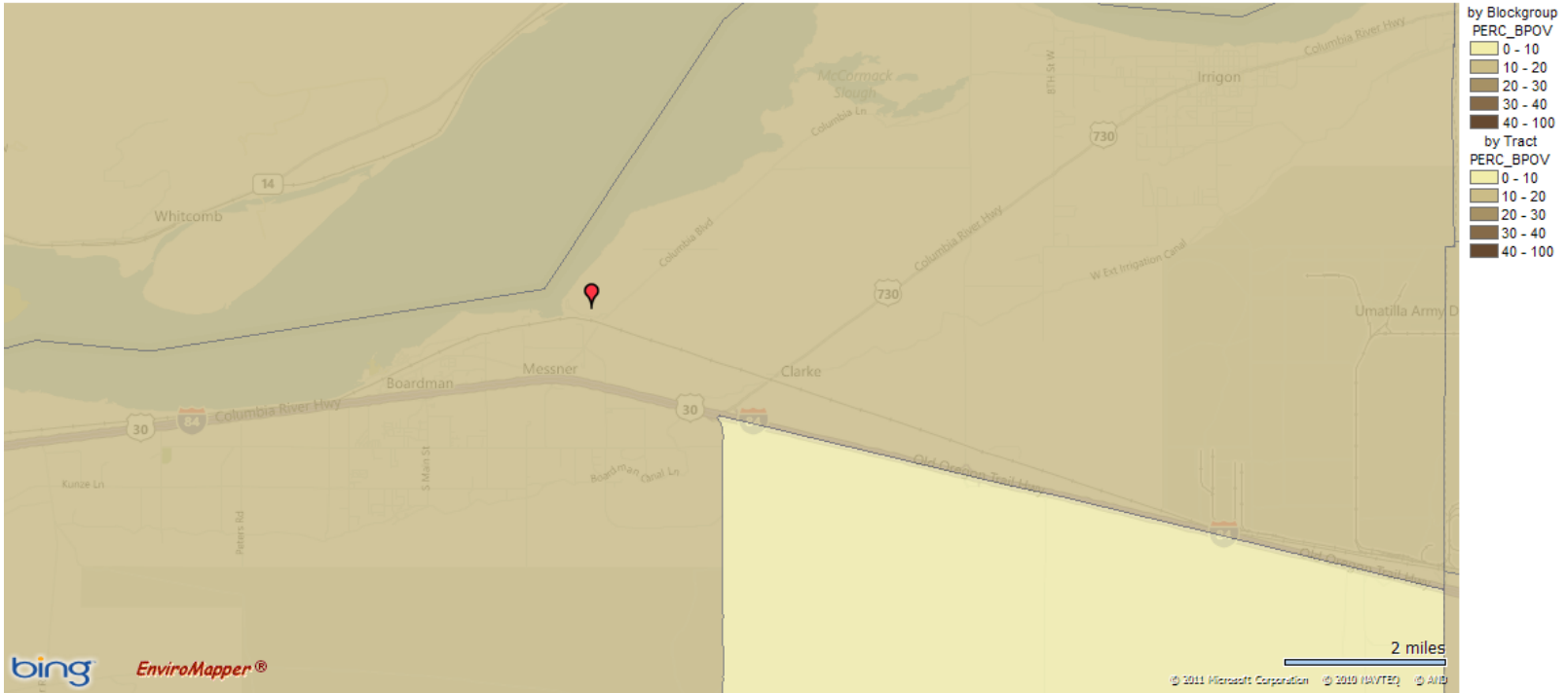
- No major EJ or civil rights impact is likely to result if the proposal is implemented.
 A major EJ or civil rights impact is likely to result if the proposal is implemented.

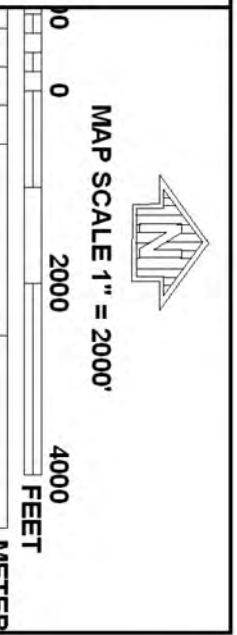
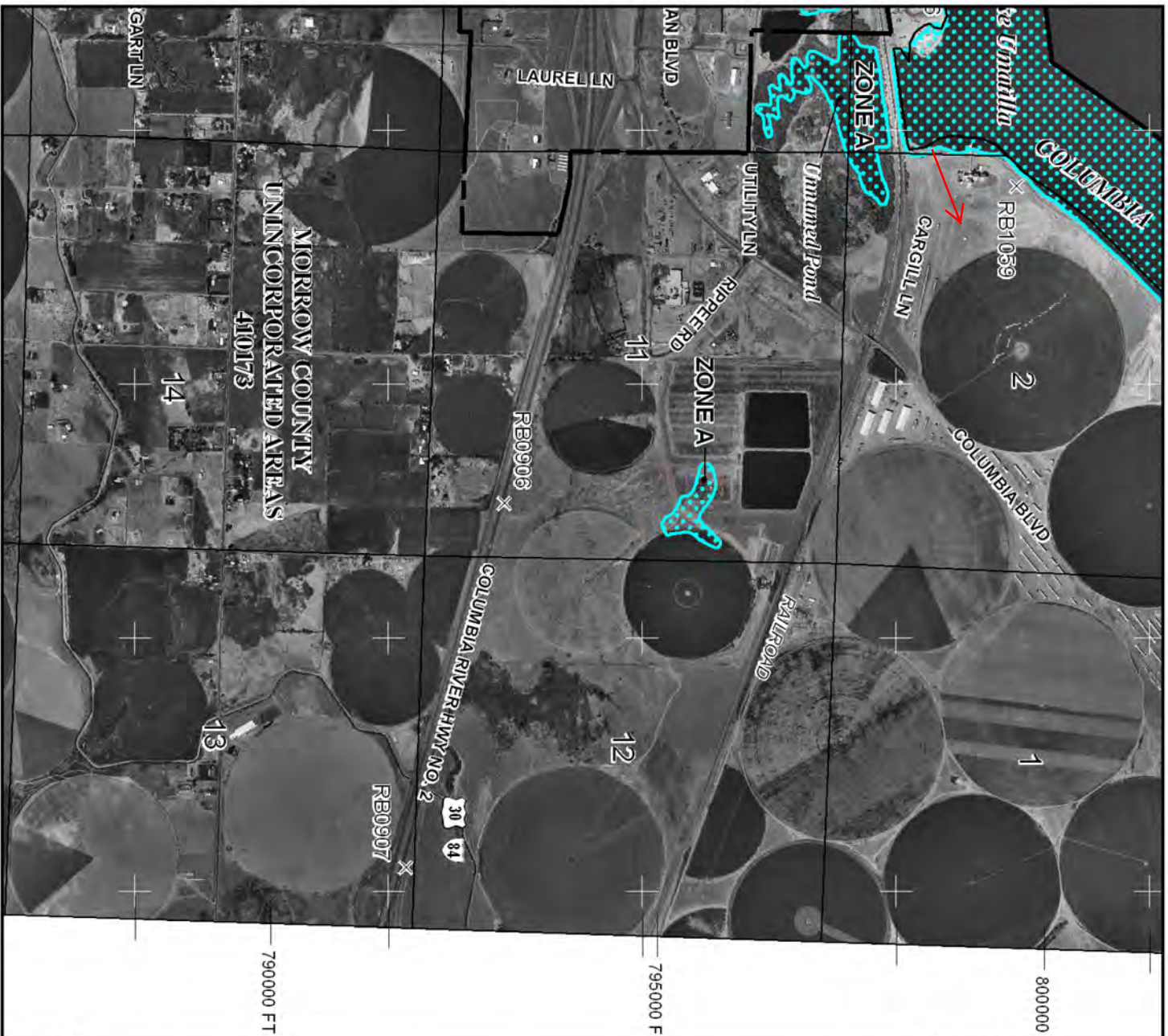
Juliet D. Salas
Name and Title of Certifying Official

Environmental Protection Specialist

09/12/2011
Date

ZeaChem - Percent Below Poverty - 17.3 Percent





NFIP

PANEL 0150D

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

MORROW COUNTY,

OREGON

AND INCORPORATED AREAS

PANEL 0150 OF 1400

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
BOARDMAN, CITY OF	410174	0150	D
MORROW COUNTY, UNINCORPORATED AREAS	410173	0150	D

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
41049C0150D

EFFECTIVE DATE
DECEMBER 18, 2007

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

DEPARTMENT OF HOMELAND SECURITY
 FEDERAL EMERGENCY MANAGEMENT AGENCY
 STANDARD FLOOD HAZARD DETERMINATION

See The Attached
 Instructions

O.M.B. No. 1660-0040
 Expires December 31, 2011

SECTION I - LOAN INFORMATION

1. LENDER NAME AND ADDRESS SILICON VALLEY BANK 3003 TASMAN DR. SANTA CLARA, CA 95054 Requestor: YLLARI LEVANO Fax # 4086546313 Phone # 4086547400		2. COLLATERAL (Building/Mobile Home/Personal Property) PROPERTY ADDRESS ZeaChem Boardman Biorefinery, LLC East Beach Industrial Park Boardman, OR 97818 LOT: BLOCK: SUBDIVISION: TAX#: SECTION: TWP: RANGE: DESCRIPTION: Tax ID: Code No. 25-04 Account R04282, Map No 04N25 02, 100	
3. LENDER ID. NO.	4. LOAN IDENTIFIER ZeaChem/50A	5. AMOUNT OF FLOOD INSURANCE REQUIRED	

SECTION II

A. NATIONAL FLOOD INSURANCE PROGRAM (NFIP) COMMUNITY JURISDICTION

1. NFIP Community Name MORROW CO *	2. County (ies) Morrow	3. State OR	4. NFIP Community Number 410173
--	----------------------------------	-----------------------	---

B. NATIONAL FLOOD INSURANCE PROGRAM (NFIP) DATA AFFECTING BUILDING/MOBILE HOME

1. NFIP Map Number or Community Panel Number (Community name, if not the same as "A") 410173 0150 D	2. NFIP Map Panel Effective/Revised Date 12/18/2007	3. LOMA/LOMR <input type="checkbox"/> Yes Date _____	4. Flood Zone Elev. X	5. No NFIP Map
---	---	---	---------------------------------	-----------------------

C. FEDERAL FLOOD INSURANCE AVAILABILITY (Check all that apply)

1. Federal Flood insurance is available (community participates in nfip). Regular Program Emergency Program of NFIP

2. Federal Flood insurance is NOT available because community is not participating in the NFIP.

3. Building/Mobile Home is in a Coastal Barrier Resource Area (CBRA) or Otherwise Protected Area (OPA), Federal Flood insurance may not be available.
 CBRA/OPA designated date: _____

D. DETERMINATION

IS BUILDING/MOBILE HOME IN SPECIAL FLOOD HAZARD AREA (ZONES CONTAINING THE LETTERS "A" OR "V")? Yes No

If yes, flood insurance is required by the Flood Disaster Protection Act of 1973.
 If no, flood insurance is not required by the Flood Disaster Protection Act of 1973.

E. COMMENTS (Optional)

Last Revision: 08/02/2011
 Reference#: C0506FL00011221

E1a. SUBMITTED ADDRESS FOR CERTIFICATION
 East Beach Industrial Park
 Boardman, OR 97818

CERTIFY TO: HMDA INFO: ST: 41 CO: 049 SMSA: N/A CT: 9701.00	TYPE OF COVERAGE: Life of Loan	RUSH:
---	---------------------------------------	--------------

This determination is based on examining the NFIP map, any Federal Emergency Management Agency revisions to it, and any other information needed to locate the building/mobile home on the NFIP map. This flood determination is only for determining the flood status of the listed property. It is not to be used to decide whether to purchase a property or determining the value of a property. Use of determination deems acceptance of conditions.

F. PREPARER'S INFORMATION

NAME, ADDRESS TELEPHONE NUMBER (if other than Lender) Factual Data Flood 5200 Hahns Peak Drive Loveland, CO 80538 1-800-730-6374 FAX 1-800-216-5663 www.krollfactualdata.com	DATE OF DETERMINATION: 08/02/2011 CERTIFIED BY: 3504 NFR#: 3138931-13469832
--	---

APPENDIX III



Oregon

Theodore R. Kulongoski, Governor

Parks and Recreation Department

State Historic Preservation Office

725 Summer St NE, Ste C

Salem, OR 97301-1266

(503) 986-0671

Fax (503) 986-0793

www.oregonheritage.org

8/2/2010

Mr. Russ Murray
Zechem Inc
165 S Union Blvd STE 380
Lakewood, CO 80228



RE: SHPO Case No. 10-1624
Zechem Cellulosic Ethanol Demo Plant Proj DE-EE0002880
71099 Rail Loop Dr, Boardman vicinity, Morrow County

Dear Russ:

Our office recently received your report about the project referenced above. I have reviewed your report (SHPO# 23520) and agree that the project will have no affect on any known cultural resources. No further archaeological research is needed with this project.

Please be aware, however, that if during development activities you or your staff encounters any cultural material (i.e., historic or prehistoric), all activities should cease immediately and an archaeologist should be contacted to evaluate the discovery. Under state law (ORS 358.905-955) it is a Class B misdemeanor to impact an archaeological site on public or private land in Oregon. Impacts to Native American graves and cultural items are considered a Class C felony (ORS 97.740-760). If you have any questions regarding any future discovery or my letter, feel free to contact our office at your convenience.

Dennis Griffin, Ph.D., RPA
State Archaeologist
(503) 986-0674
dennis.griffin@state.or.us





Oregon

John A. Kitzhaber, MD, Governor

Parks and Recreation Department

State Historic Preservation Office

725 Summer St NE, Ste C

Salem, OR 97301-1266

(503) 986-0671

Fax (503) 986-0793

www.oregonheritage.org



May 18, 2011

Ms. Laura Cutbirth
Westar Trade Resources
2030 Main Street, Suite 410
Dallas, TX 75201

RE: SHPO Case No. 11-0833
USDA Rural Dev Proj ZeaChem Boardman Biorefinery
DOE/FOE/vacant lot development
USDA Rural Dev/Port of Morrow/Westar Trade Res
71099 Rial Loop Dr, Boardman, Morrow County

Dear Ms. Cutbirth:

I have recently received a request from your office to review the project referenced above for any known cultural resources within this project area. Unfortunately, your request arrived without a map that will allow me to pinpoint the exact location of the proposed project, which I can compare with our office's GIS database. Can you please send me a map of the project area (using a 7.5' USGS map) that clearly shows the proposed land development area in relation to the Township, Range and Section? In looking at our database of known sites and surveys I see that a survey was completed in the past in the vicinity of your project. This report was titled Port of Morrow ZeaChem Test Site Cultural Resources Survey, Morrow County, Oregon and had been assigned SHPO# 23520 back in 2010 when it was first reviewed. Your application includes a map (page 5) of an area from a report by Plateau Archaeological Investigations that our office has not seen. If this is from a survey report that has been completed could you please send us a copy of this survey so that it can be reviewed and added to our database/library. Is your current project within the lands depicted on the Plateau Archaeological Investigations map? Prehistoric archaeological sites are known to exist in very close proximity to this area so our office wants to be sure that the current project APE does not adversely effect any of these sites..

Upon receipt of a more detailed APE map, and hopefully a copy of the Plateau Archaeological Investigations report, I will review your project application and get back to you in a timely manner. In order to help us track your project accurately, please be sure to reference the SHPO case number above in all correspondence.

Sincerely,

Dennis Griffin, Ph.D., RPA
State Archaeologist
(503) 986-0674
dennis.griffin@state.or.us

cc. Donald Hollis, USDA





**United States Department of Agriculture
Rural Development**
Rural Business-Cooperative Service, Program Support Staff
1400 Independence Avenue, SW
Stop 0761, Room 6900
Washington, DC 20250

July 7, 2011

The Nez Perce Tribe
Keith Patrick Baird
PO Box 365
Lapwai, Idaho 83540

Dear Mr. Baird:

Pursuant to 36 CFR Part 800, Section 800.3(a), the USDA, Rural Development, Rural Business-Cooperative Service (RBCS) is considering an application for loan guarantee pursuant to Section 9003 of the Food, Conservation, and Energy Act of 2008. RBCS's undertaking is the issuance of a loan guarantee to construct and operate a Cellulosic Biorefinery to be located on a 25 acre parcel of land located within the Port of Morrow Industrial Park outside of the city of Boardman, Morrow County, Oregon. Attached is a project description (Attachment 1) and site location map (Attachment 2). The site is located at T4N, R25E, Section 2.

Per 36 CFR 800.16(d), the Area of Potential Effects (APE) for this undertaking is defined as the entire 25 acre site as depicted in Attachment 3 (the highlighted area in darker green is the 25 acre parcel and the APE).

According to the archeological review of the area surrounding and encompassing the site, there is a moderate potential for the presence of archeological resources at the site. Therefore additional archeological surveys are proposed within the APE.

You have been identified as a possible consulting party under 26 CFR Part 800, Section 800.2. Therefore we respectfully request your comments on the attached information regarding the proposed project. We would appreciate any comments you may have on the following issues:

- The described project.
- The described area of potential effect.
- The potential effects of the undertaking on any historic property that have thus far been identified.
- Information on other historic properties that might be present and could be affected by the proposed project, including property with religious or cultural significance to one or more Indian tribes.
- Any additional parties we should consider consulting.

Committed to the future of rural communities.

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To file a complaint of discrimination write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call (202) 720-5964 (voice or TDD).

Patrick Baird, Nez Perce Tribe

July 7, 2011

Page 2

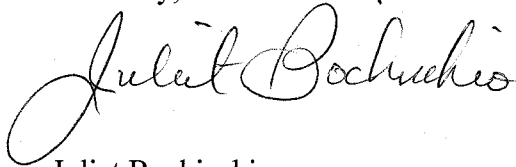
- Any other comments or information related to historic preservation that you believe is relevant to the Section 106 review.

Because this review is time-sensitive and must adhere to the provisions of 36 CFR Part 800, please submit your comments within 30 days from the receipt of this letter.

If you have any questions, please contact me at 202-205-8242 or by e-mail at juliet.bochicchio@wdc.usda.gov.

Thank you in advance for your cooperation.

Sincerely,



Juliet Bochicchio
Environmental Protection Specialist
USDA Rural Business-Cooperative Service

cc: Jeff Deiss, USDA RBCS
Anthony Ashby, USDA RBCS

Attachments: 1) Project Description
2) General vicinity map
3) Aerial Photograph showing Area of Potential Effect (APE)

Rural Development
U.S. Department of Agriculture
Rural Business-Cooperative Service, Program Support Staff
1400 Independence Ave., S.W. | Washington, D.C. 20250
Mail Stop 0761
Phone: 202.720.9653 | Fax: 202.690.4335
www.rurdev.usda.gov

Generalized Project Description
Proposed Cellulosic Biorefinery
ZeaChem
Boardman, Oregon
July 2011

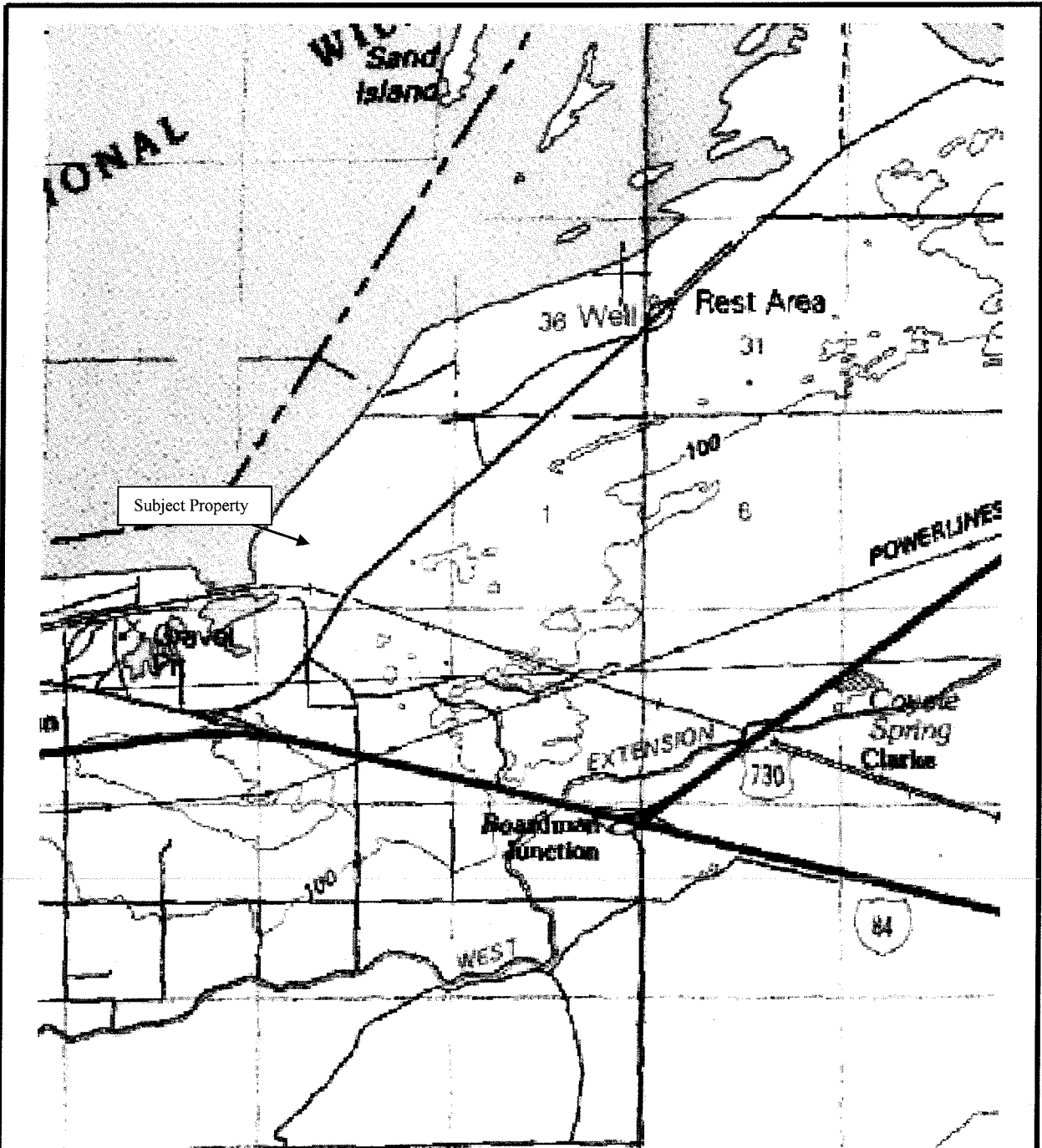
The USDA, Rural Development, Rural Business-Cooperative Service (RBCS) is considering an application for loan guarantee pursuant to Section 9003 of the Food, Conservation, and Energy Act of 2008 received from Silicon Valley Bank for ZeaChem, LLC to construct and operate a Cellulosic Biorefinery to be located outside of the city of Boardman, Morrow County, Oregon. The proposal would include the construction of the biorefinery and its related infrastructure to be located on approximately 25 acres of land located within an existing Industrial Park identified as the Port of Morrow located just outside of Boardman, Oregon. The proposed site is directly adjacent to ZeamChem's 250,000 gallon per year integrated Demonstration Plant. The site is zoned for heavy industry use and is supported with industrial scale utilities. The Port of Morrow Industrial Park is a designated enterprise zone that hosts multiple commercial and industrial facilities with levels of traffic anticipated. The site is serviced by barge load out docks on the Columbia River, existing rail loop facilities connected to the neighboring UP main line and existing Interstate Highway 84 interconnections.

The subject property is located on an undeveloped 25 acre parcel of land approximately ¼ -mile by paved road west from Columbia Avenue on Rail Loop Drive. Lewis and Clark Drive also enters the area westerly from Columbia Avenue and form a circular drive where it meets Rail Loop Drive through the north-westerly portion of the East Beach Industrial Park. The subject property is entirely surrounded by either undeveloped parent parcel or developed industrial properties.

The purpose of the proposed biorefinery is to produce advanced biofuels and bio-based chemicals that will contribute to meeting the requirements of the Renewable Fuel Standard established in the Energy Independence and Security Act of 2007. The source of the cellulosic biomass is proposed from Greenwood Tree Farm which will supply 70 percent (hogfuel) of the feedstock requirements and Oregon hay will supply the other 30 percent (wheat straw).

Historically, the subject property has been used for agriculture and more recently an industrial park. Infrastructure, including water, sewer, electricity, and natural gas, are available within the proposed biorefinery location. The main method of transportation for feedstock supply will be by truck, using existing roads and highways. The main method of transportation for fuel off-take will be piping to the existing ethanol facility and transport via barge. The number of feedstock trucks and product off-take barges is not expected to cause a major safety concern or require any additional traffic control devices.

According to the archeological review of the area surrounding and encompassing the site, there is a moderate potential for the presence of archeological resources at the site. Therefore additional archeological surveys are proposed within the APE. Please note that the proximity of the site to the Columbia River was historically much farther away from the river, but when the river was dammed, water level elevations were increased, thus moving the river closer to this site.



NORTH



<i>Eagle River Development, LLC</i>	
<i>Topographic Location Map Port of Morrow Site: ZEA CHEM (SW1/4, S.2, T4N, R25E W.M., Boardman, OR Quad 1993)</i>	
<i>Provided by: ERDLLC</i>	<i>Date: February 2011</i>
<i>ERDLLC#: 2201E</i>	<i>Exhibit: 2</i>

ZeaChem Biorefinery Location



- Located at the Port of Morrow, in Boardman, OR, ZeaChem's demo and first commercial biorefinery sites are on the Columbia River next to the barge dock, within the UP rail loop, and across the road from OR Hay.



**United States Department of Agriculture
Rural Development**
Rural Business-Cooperative Service, Program Support Staff
1400 Independence Avenue, SW
Stop 0761, Room 6900
Washington, DC 20250

July 7, 2011

Johnson Meninick
The Confederated Tribes and Bands of the Yakama Indian Nation
P.O. Box 151
Toppenish, WA 98948

Dear Mr. Meninick:

Pursuant to 36 CFR Part 800, Section 800.3(a), the USDA, Rural Development, Rural Business-Cooperative Service (RBCS) is considering an application for loan guarantee pursuant to Section 9003 of the Food, Conservation, and Energy Act of 2008. RBCS's undertaking is the issuance of a loan guarantee to construct and operate a Cellulosic Biorefinery to be located on a 25 acre parcel of land located within the Port of Morrow Industrial Park outside of the city of Boardman, Morrow County, Oregon. Attached is a project description (Attachment 1) and site location map (Attachment 2). The site is located at T4N, R25E, Section 2.

Per 36 CFR 800.16(d), the Area of Potential Effects (APE) for this undertaking is defined as the entire 25 acre site as depicted in Attachment 3 (the highlighted area in darker green is the 25 acre parcel and the APE).

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You have been identified as a possible consulting party under 26 CFR Part 800, Section 800.2. Therefore we respectfully request your comments on the attached information regarding the proposed project. We would appreciate any comments you may have on the following issues:

- The described project.
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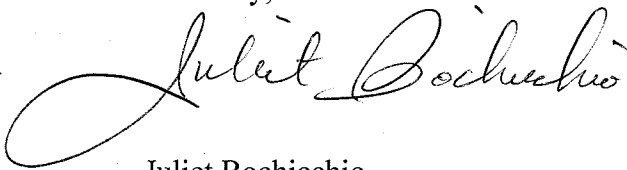
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If you have any questions, please contact me at 202-205-8242 or by e-mail at juliet.bochicchio@wdc.usda.gov.

Thank you in advance for your cooperation.

Sincerely,



Juliet Bochicchio
Environmental Protection Specialist
USDA Rural Business-Cooperative Service

cc: Jeff Deiss, USDA RBCS
Anthony Ashby, USDA RBCS

Attachments: 1) Project Description
2) General vicinity map
3) Aerial Photograph showing Area of Potential Effect (APE)

Rural Development
U.S. Department of Agriculture
Rural Business-Cooperative Service, Program Support Staff
1400 Independence Ave., S.W. | Washington, D.C. 20250
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Generalized Project Description
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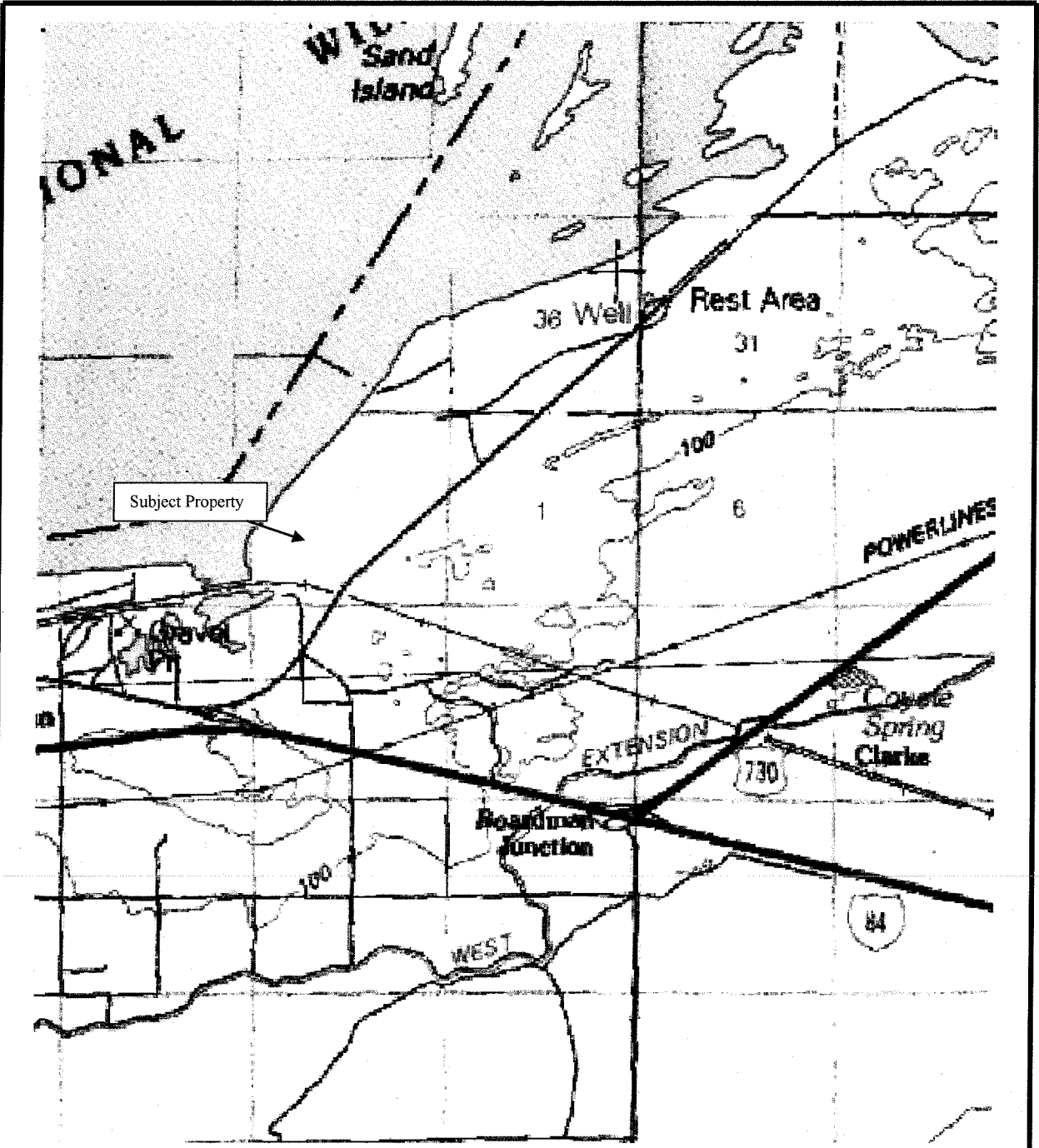
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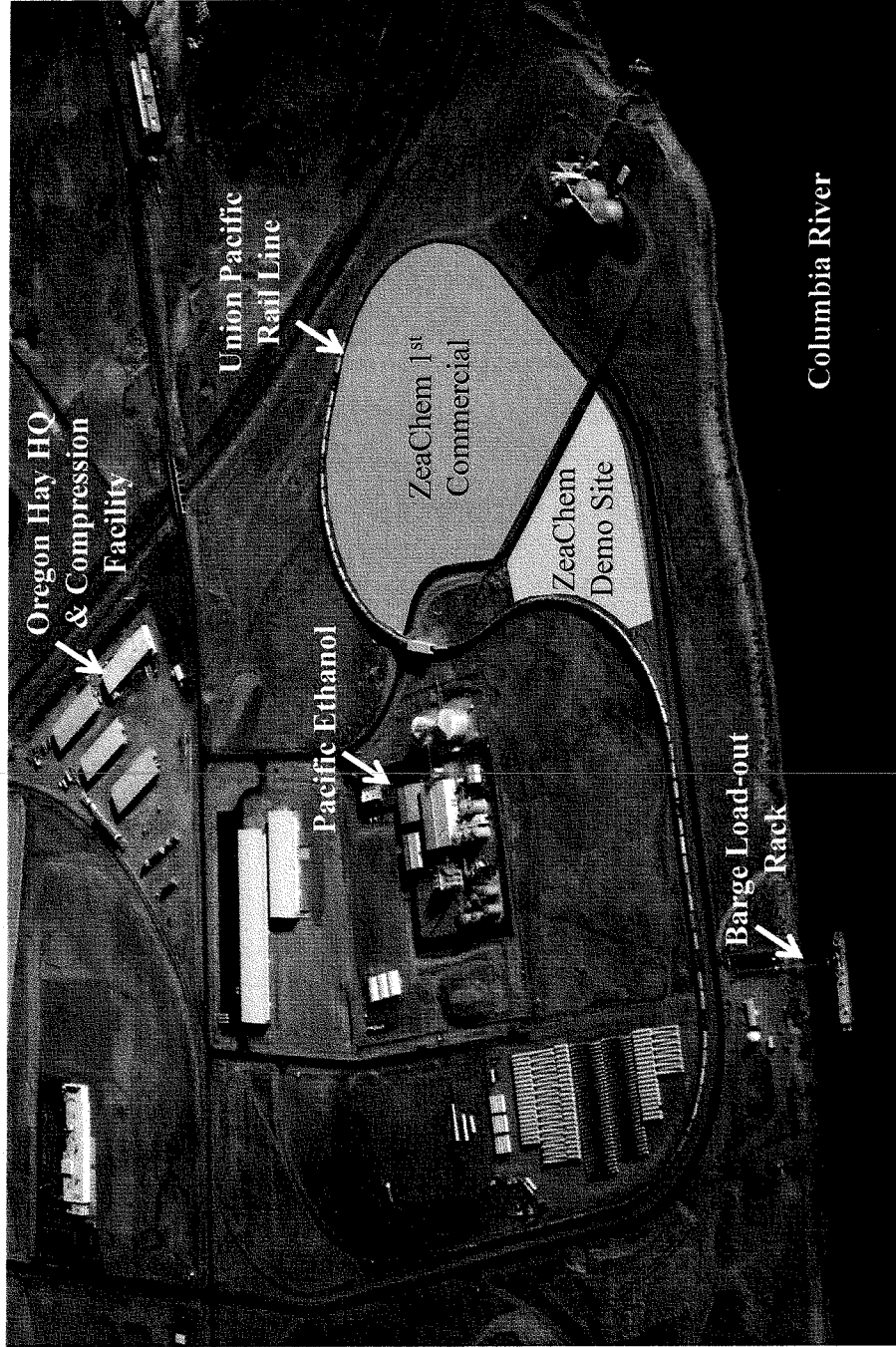


NORTH



<i>Eagle River Development, LLC</i>	
<i>Topographic Location Map Port of Morrow Site: ZEA CHEM (SW1/4, S.2, T4N, R25E W.M., Boardman, OR Quad 1993)</i>	
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**United States Department of Agriculture
Rural Development**

Rural Business-Cooperative Service, Program Support Staff
1400 Independence Avenue, SW
Stop 0761, Room 6900
Washington, DC 20250

July 7, 2011

Sally Bird,
The Confederated Tribes of the Warm Springs Reservation of Oregon
PO Box 460
Warm Springs, Oregon 97761

Dear Ms. Bird:

Pursuant to 36 CFR Part 800, Section 800.3(a), the USDA, Rural Development, Rural Business-Cooperative Service (RBCS) is considering an application for loan guarantee pursuant to Section 9003 of the Food, Conservation, and Energy Act of 2008. RBCS's undertaking is the issuance of a loan guarantee to construct and operate a Cellulosic Biorefinery to be located on a 25 acre parcel of land located within the Port of Morrow Industrial Park outside of the city of Boardman, Morrow County, Oregon. Attached is a project description (Attachment 1) and site location map (Attachment 2). The site is located at T4N, R25E, Section 2.

Per 36 CFR 800.16(d), the Area of Potential Effects (APE) for this undertaking is defined as the entire 25 acre site as depicted in Attachment 3 (the highlighted area in darker green is the 25 acre parcel and the APE).

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- Any additional parties we should consider consulting.

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Sally Bird, Warm Springs Indian Reservation
July 7, 2011
Page 2

- Any other comments or information related to historic preservation that you believe is relevant to the Section 106 review.

Because this review is time-sensitive and must adhere to the provisions of 36 CFR Part 800, please submit your comments within 30 days from the receipt of this letter.

If you have any questions, please contact me at 202-205-8242 or by e-mail at juliet.bochicchio@wdc.usda.gov.

Thank you in advance for your cooperation.

Sincerely,



Juliet Bochicchio
Environmental Protection Specialist
USDA Rural Business-Cooperative Service

cc: Jeff Deiss, USDA RBCS
Anthony Ashby, USDA RBCS

Attachments: 1) Project Description
2) General vicinity map
3) Aerial Photograph showing Area of Potential Effect (APE)

Rural Development
U.S. Department of Agriculture
Rural Business-Cooperative Service, Program Support Staff
1400 Independence Ave., S.W. | Washington, D.C. 20250
Mail Stop 0761
Phone: 202.720.9653 | Fax: 202.690.4335
www.rurdev.usda.gov

Generalized Project Description
Proposed Cellulosic Biorefinery
ZeaChem
Boardman, Oregon
July 2011

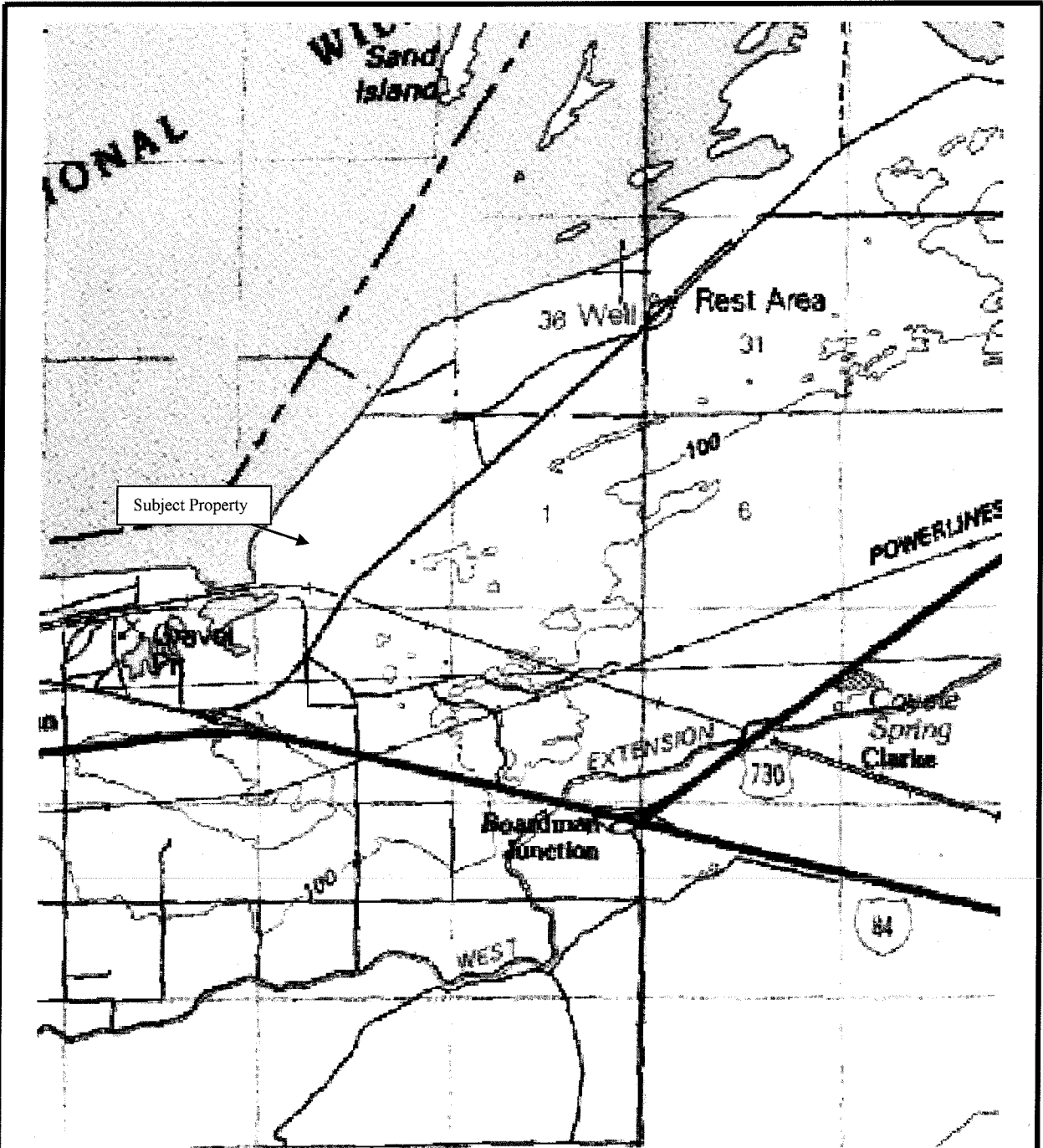
The USDA, Rural Development, Rural Business-Cooperative Service (RBCS) is considering an application for loan guarantee pursuant to Section 9003 of the Food, Conservation, and Energy Act of 2008 received from Silicon Valley Bank for ZeaChem, LLC to construct and operate a Cellulosic Biorefinery to be located outside of the city of Boardman, Morrow County, Oregon. The proposal would include the construction of the biorefinery and its related infrastructure to be located on approximately 25 acres of land located within an existing Industrial Park identified as the Port of Morrow located just outside of Boardman, Oregon. The proposed site is directly adjacent to ZeamChem's 250,000 gallon per year integrated Demonstration Plant. The site is zoned for heavy industry use and is supported with industrial scale utilities. The Port of Morrow Industrial Park is a designated enterprise zone that hosts multiple commercial and industrial facilities with levels of traffic anticipated. The site is serviced by barge load out docks on the Columbia River, existing rail loop facilities connected to the neighboring UP main line and existing Interstate Highway 84 interconnections.

The subject property is located on an undeveloped 25 acre parcel of land approximately ¼ -mile by paved road west from Columbia Avenue on Rail Loop Drive. Lewis and Clark Drive also enters the area westerly from Columbia Avenue and form a circular drive where it meets Rail Loop Drive through the north-westerly portion of the East Beach Industrial Park. The subject property is entirely surrounded by either undeveloped parent parcel or developed industrial properties.

The purpose of the proposed biorefinery is to produce advanced biofuels and bio-based chemicals that will contribute to meeting the requirements of the Renewable Fuel Standard established in the Energy Independence and Security Act of 2007. The source of the cellulosic biomass is proposed from Greenwood Tree Farm which will supply 70 percent (hogfuel) of the feedstock requirements and Oregon hay will supply the other 30 percent (wheat straw).

Historically, the subject property has been used for agriculture and more recently an industrial park. Infrastructure, including water, sewer, electricity, and natural gas, are available within the proposed biorefinery location. The main method of transportation for feedstock supply will be by truck, using existing roads and highways. The main method of transportation for fuel off-take will be piping to the existing ethanol facility and transport via barge. The number of feedstock trucks and product off-take barges is not expected to cause a major safety concern or require any additional traffic control devices.

According to the archeological review of the area surrounding and encompassing the site, there is a moderate potential for the presence of archeological resources at the site. Therefore additional archeological surveys are proposed within the APE. Please note that the proximity of the site to the Columbia River was historically much farther away from the river, but when the river was dammed, water level elevations were increased, thus moving the river closer to this site.



NORTH



Eagle River Development, LLC

*Topographic Location Map
 Port of Morrow Site: ZEA CHEM
 (SW1/4, S.2, T4N, R25E W.M., Boardman, OR Quad 1993)*

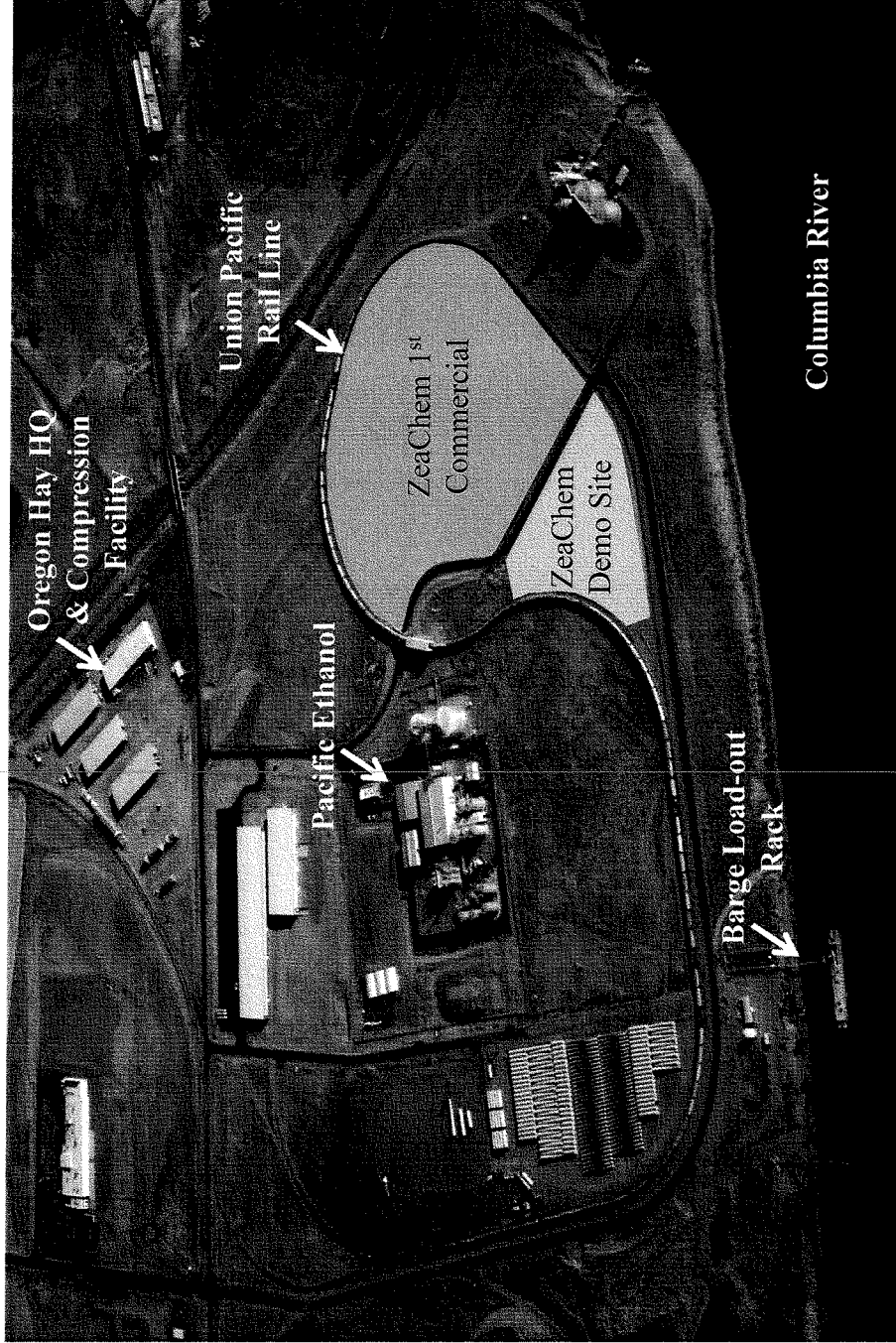
Provided by: ERDLLC

Date: February 2011

ERDLLC#: 2201E

Exhibit: 2

ZeaChem Biorefinery Location



- Located at the Port of Morrow, in Boardman, OR, ZeaChem's demo and first commercial biorefinery sites are on the Columbia River next to the barge dock, within the UP rail loop, and across the road from OR Hay.



**United States Department of Agriculture
Rural Development**

Rural Business-Cooperative Service, Program Support Staff
1400 Independence Avenue, SW
Stop 0761, Room 6900
Washington, DC 20250

July 7, 2011

Teara Farrow
The Confederated Tribes of the Umatilla Indian Reservation
46411 Timine Way
Pendleton, OR 97801

Dear Ms. Farrow:

Pursuant to 36 CFR Part 800, Section 800.3(a), the USDA, Rural Development, Rural Business-Cooperative Service (RBCS) is considering an application for loan guarantee pursuant to Section 9003 of the Food, Conservation, and Energy Act of 2008. RBCS's undertaking is the issuance of a loan guarantee to construct and operate a Cellulosic Biorefinery to be located on a 25 acre parcel of land located within the Port of Morrow Industrial Park outside of the city of Boardman, Morrow County, Oregon. Attached is a project description (Attachment 1) and site location map (Attachment 2). The site is located at T4N, R25E, Section 2.

Per 36 CFR 800.16(d), the Area of Potential Effects (APE) for this undertaking is defined as the entire 25 acre site as depicted in Attachment 3 (the highlighted area in darker green is the 25 acre parcel and the APE).

According to the archeological review of the area surrounding and encompassing the site, there is a moderate potential for the presence of archeological resources at the site. Therefore additional archeological surveys are proposed within the APE.

You have been identified as a possible consulting party under 26 CFR Part 800, Section 800.2. Therefore we respectfully request your comments on the attached information regarding the proposed project. We would appreciate any comments you may have on the following issues:

- The described project.
- The described area of potential effect.
- The potential effects of the undertaking on any historic property that have thus far been identified.
- Information on other historic properties that might be present and could be affected by the proposed project, including property with religious or cultural significance to one or more Indian tribes.
- Any additional parties we should consider consulting.

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"USDA is an equal opportunity provider, employer and lender."

To file a complaint of discrimination write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call (202) 720-5964 (voice or TDD).

Teara Farrow, Umatilla Indian Reservation

July 7, 2011

Page 2

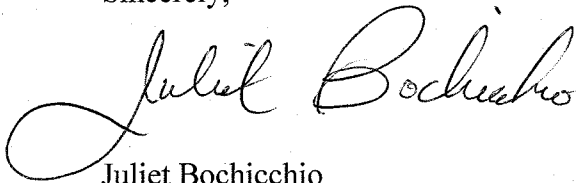
- Any other comments or information related to historic preservation that you believe is relevant to the Section 106 review.

Because this review is time-sensitive and must adhere to the provisions of 36 CFR Part 800, please submit your comments within 30 days from the receipt of this letter.

If you have any questions, please contact me at 202-205-8242 or by e-mail at juliet.bochicchio@wdc.usda.gov.

Thank you in advance for your cooperation.

Sincerely,



Juliet Bochicchio
Environmental Protection Specialist
USDA Rural Business-Cooperative Service

cc: Jeff Deiss, USDA RBCS
Anthony Ashby, USDA RBCS

Attachments: 1) Project Description
 2) General vicinity map
 3) Aerial Photograph showing Area of Potential Effect (APE)

Rural Development
U.S. Department of Agriculture
Rural Business-Cooperative Service, Program Support Staff
1400 Independence Ave., S.W. | Washington, D.C. 20250
Mail Stop 0761
Phone: 202.720.9653 | Fax: 202.690.4335
www.rurdev.usda.gov

**Generalized Project Description
Proposed Cellulosic Biorefinery
ZeaChem
Boardman, Oregon
July 2011**

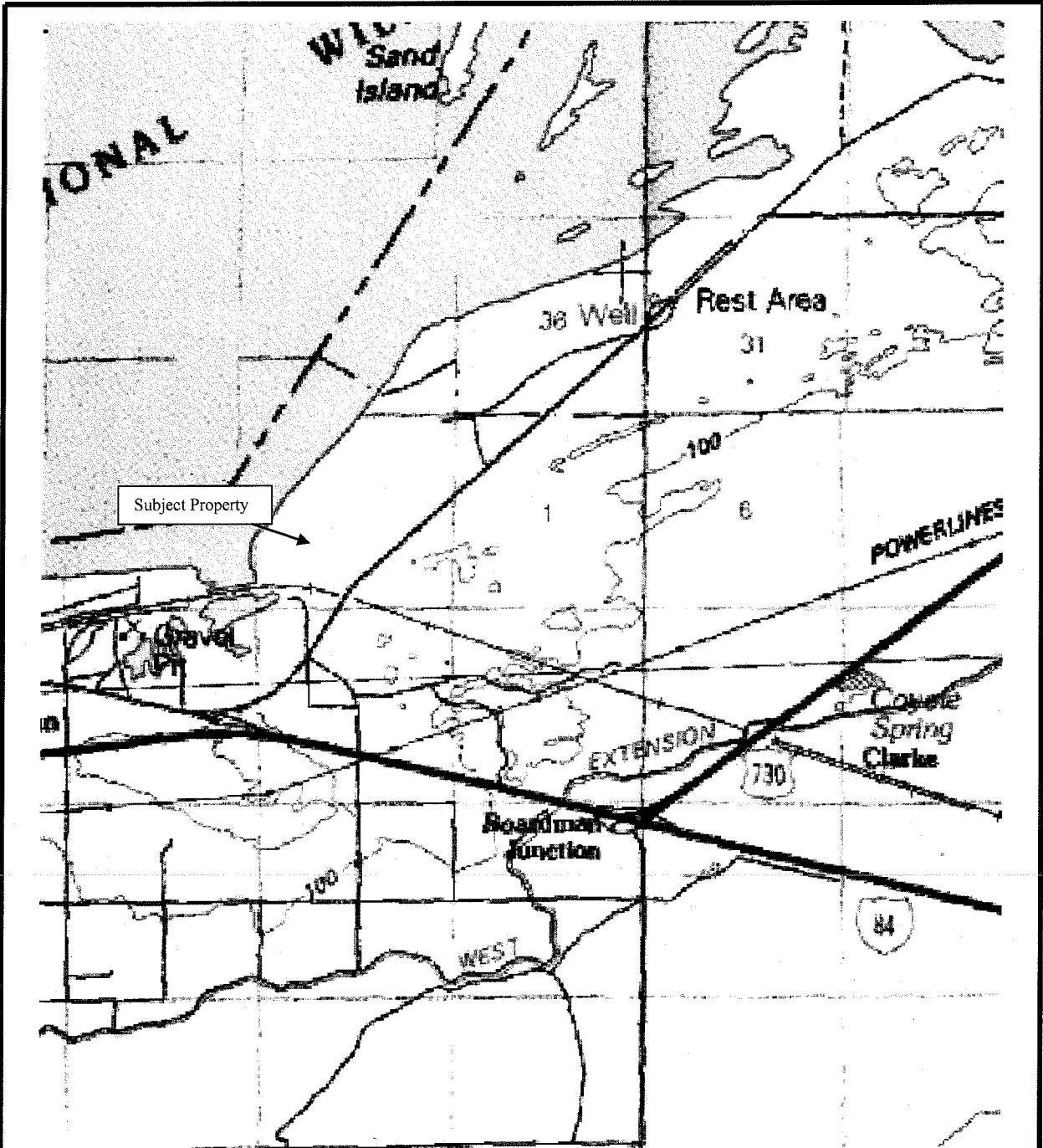
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Historically, the subject property has been used for agriculture and more recently an industrial park. Infrastructure, including water, sewer, electricity, and natural gas, are available within the proposed biorefinery location. The main method of transportation for feedstock supply will be by truck, using existing roads and highways. The main method of transportation for fuel off-take will be piping to the existing ethanol facility and transport via barge. The number of feedstock trucks and product off-take barges is not expected to cause a major safety concern or require any additional traffic control devices.

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NORTH



Eagle River Development, LLC

Topographic Location Map

Port of Morrow Site: ZEA CHEM

(SW1/4, S.2, T4N, R25E W.M., Boardman, OR Quad 1993)

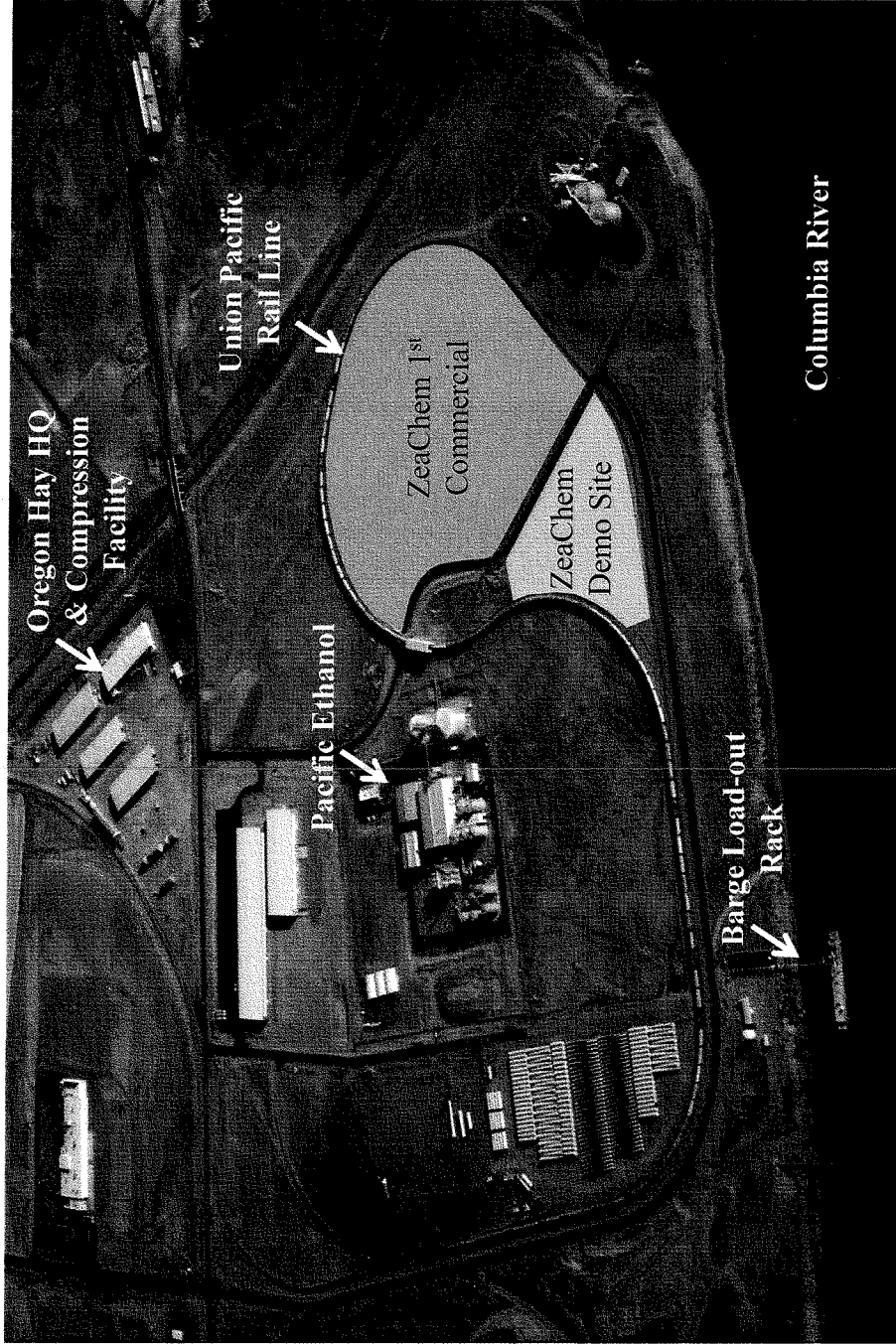
Provided by: ERDLLC

Date: February 2011

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ZeaChem Biorefinery Location



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APPENDIX IV

Lawmakers snipe, Wall St. frets as deadline nears

By JIM KUHNHENN
The Associated Press

temoon, less than three weeks before an Aug. 2 deadline for Americans could lose their jobs," he

Continued From 1A

she had heard of the bill. "It sounds like excellent news," she said. "I'm really surprised." Hall has worked hard on the Milton-Freewater's levee issue, from challenging the maps, to taking a lead-

ness, "The ability with Mr. Clemens with this jury to let a fair trial with this jury would be very difficult if not impossible." Prosecutors suggested the problem could be fixed with an instruction testimony before Congress and had the jury removed from the courtroom. Clemens is accused of lying during that testimony when he said he never used performance-enhancing drugs during his

Proseutors had wanted to call Laura Pettitte as a witness to back up her husband's account, but Walton had said he wasn't inclined to have her testi-

Preliminary Notice of Possible Impact on Important Resources

Zeachem Boardman Biorefinery LLC
Boardman, Oregon

The USDA, Rural Development, Rural Business-Cooperative Service is considering an application for loan guarantee pursuant to Section 9003 of the Food, Conservation, and Energy Act of 2008 received from Silicon Valley Bank for Zeachem Boardman Biorefinery LLC (Zeachem) to construct and operate a Cellulosic Biorefinery to be located outside of the city of Boardman, Morrow County, Oregon (T4N, R25E, Section 2). The proposal would include the construction of the biorefinery and related infrastructure located on approximately 25 acres of land within the existing Port of Morrow Industrial Park. The Industrial Park is a designated enterprise zone that currently hosts multiple commercial and industrial facilities. The purpose of the proposed biorefinery is to produce ethanol and bio-based chemicals from agricultural and forestry residues that will contribute to meeting the requirements of the federal renewable fuel standard.

If implemented, the proposal may have an impact on potential historic properties, if present, on the site. An archeological study is being completed on the site currently. The purpose of this notice is to inform interested parties and the public of possible impacts to historic properties, and to request comments concerning the proposal.

Information on the proposal is available for review by contacting Ms. Juliet Boichichio at 202-205-8242 or at RD.NEPA@wdc.usda.gov. Any person interested in commenting on the proposal should submit comments within 30 days following the date of this notice to USDA, RBCS-PSS, 1400 Independence Ave SW, Mail STOP 0761, Washington, DC, 20250, attention: Juliet Boichichio or at RD.NEPA@wdc.usda.gov.

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SAT. JULY 16 • 4 PM

OFF PAGE ONE

Tuesday, July 12, 2011

ANIMALS: Sigler picked from 650 applicants to vet school

Continued From 1A

Two weeks after she

spending cuts to be concentrated in the later years of a deal. They say that despite promising cuts of \$1.1 trillion from Cabinet agency operating budgets, the White House is insisting on a two-year freeze in such spending at the current level of \$1.05 trillion.

McConnell's and Boehner's heightened criticisms come as Obama has increasingly used public appearances, including a news conference Monday and a network television interview Tuesday, to take his case to the public. Obama has argued that both Democrats and Republicans need to make politically painful decisions and has portrayed Republicans as intransigent.

Until today, Republicans had so far focused their criticism on Obama's demand for new tax revenues in the final deficit-reduction package. But McConnell's tone indicated a new line of attack based on competing versions of how much progress had been made in talks led by Vice President Joe Biden in May and June. McConnell accused the administration of leaking its proposals for spending



Dr. Ritchie L. Hibbert
www.drhibbertdental.com

1100 Southgate, Suite 3
Pendleton, OR 97801 541-612-3711

head right into practice. She had one last thing to do first.

During the 2010 Round-

BUS: Passenger says driver left, didn't explain what was going on

Continued From 1A

gas station around 2 a.m. the driver, after saying he was going to get help, left the passengers "aban-

During the 2010 Round-

Preliminary Notice of Possible Impact on Important Resources

ZeaChem Boardman Biorefinery LLC
Boardman, Oregon

The USDA, Rural Development, Rural Business-Cooperative Service is considering an application for loan guarantee pursuant to Section 9003 of the Food, Conservation, and Energy Act of 2008 received from Silicon Valley Bank for ZeaChem Boardman Biorefinery LLC (ZeaChem) to construct and operate a Cellulosic Biorefinery to be located outside of the city of Boardman, Morrow County, Oregon (T4N, R25E, Section 2). The proposal would include the construction of the biorefinery and related infrastructure located on approximately 25 acres of land within the existing Port of Morrow Industrial Park. The Industrial Park is a designated enterprise zone that currently hosts multiple commercial and industrial facilities. The purpose of the proposed biorefinery is to produce ethanol and bio-based chemicals from agricultural and forestry residues that will contribute to meeting the requirements of the federal renewable fuel standard.

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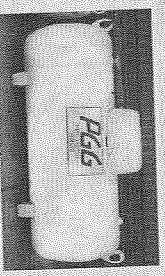
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stable condition. on. but a Portland hospital serious a Pendleton motorcyclist Friday night. Ronald W. Brodland a head-on crash seriousl

City approves demolition grant at old Chub's site

Wildlife

In addition to the four adipose fin-clipped adults, anglers also may keep five adipose fin-clipped jack Chinook per day. Jacks are salmon measuring less than 24 inches in length. Jacks do not need to be recorded on anglers' tags, but it is against the law to continue fishing for jack Chinook after meeting the limit on adult Chinooks, and wild fish must be released.

Spring Chinook fishing has been open since May 28, but high water has made fishing difficult. Biologists estimate that 7,000 adult spring Chinook will return to the Imnaha and Wallowa rivers and 70 percent of the total return will be

PREPARATION OF LIGHTS COMMITTEE WILL MEET TO DISCUSS ONGOING PREPARATIONS FOR THE EVENT

Thursday at 6 p.m. at Fire Station No. 3, 78760 Westland Road. The group welcomes anyone interested in helping with the effort.

The committee, chaired by Fairgrounds Administrative Assistant Joanna Hayden, is working to raise money and organize volunteers to ensure the show goes on. For more information, call Hayden at 541-567-6121.

—Erin Mills

PORT THE KIWANIS DOERNBECHER CHILDREN'S CANCER PROGRAM. TICKETS ARE \$5 EACH OR FIVE FOR \$20.

It has an automatic transmission, 305 hp V-6 engine and is an MCA limited edition.

The car cruised into Eastern Oregon on Monday and will be available for viewing at several locations throughout the week.

- Today, noon to 4 p.m., Pendleton Walmart, 2303 S.W. Court Place.
- Thursday, 4-7 p.m., Oxford Suites, 2400 S.W. Court Place, Pendleton.

TICKETS CAN BE PURCHASED AT LOCATIONS WHERE THE CAR IS ON DISPLAY OR BY CALLING SHIRLEY HOPPER, A CANCER PROGRAM BOARD MEMBER, AT 541-377-1029.

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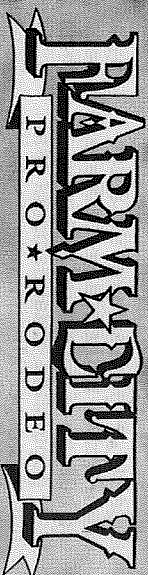
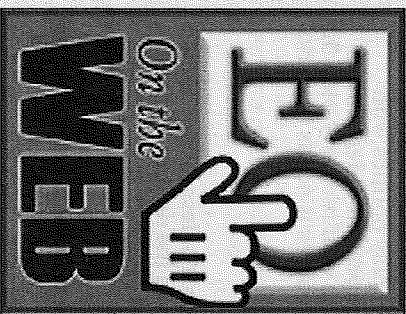
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ZeaChem Boardman Biorefinery LLC
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Wednesday-Saturday • 7:45 pm
Hermiston, Oregon

August 10-13, 2011

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