

**Evaluation Of the
Environmental Requirements
To Construct and Operate
a Coal-To-Liquids Plant**

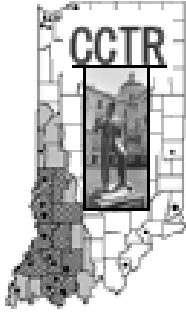
February 2008

As Referenced in the July 2008 Report:

**Coal Gasification and Liquid Fuel –
An Opportunity for Indiana**

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EXECUTIVE SUMMARY

The following summary of potential environmental requirements is based on the current level of detail available regarding the design of the proposed Coal-To-Liquids production plant. The enclosed information is preliminary and is subject to change based upon any revisions to the proposed project. The total cost for environmental permitting is estimated at \$1,118,850 and the total estimated cost for environmental studies is \$319,200 for a combined total of approximately \$1.5 million dollars. Anticipated periodic maintenance, inspections, permit-required sampling, and reporting costs are not included in the estimate.

The Coal-To-Liquids Plant will require multiple federal and state jurisdictional permits and assessments. Although a carbon dioxide (CO₂) gas storage well is not proposed in the current plant design, the permitting information is included for reference. It should also be noted that this report does not cover process related wastewater treatment facilities. If the facility expands its design efforts to include treatment facilities in order to meet prescribed water quality effluent limits, additional information and consideration will be required. Once the final plant design is received, a determination can be made as to which permits or assessments are required, need to be modified, or can be eliminated.

The following permits were evaluated for their applicability; Air Construction and Operation permits, Gas Storage Well permit, Indiana Department of Natural Resources (IDNR) Construction / Flood Control permit, National Pollutant Discharge Elimination System (NPDES) permit, Resource Recovery and Conservation Act (RCRA) permit, Sanitary Sewer construction permit, Solid Waste permit, Storm Water construction permit, and impact to Waters of the State permits.

The following environmental studies were evaluated for their applicability; Archaeological / Cultural Resources survey, Biological / Natural Resources / Natural Heritage data evaluation, Geotechnical evaluation, National Environmental Policy Act (NEPA), Phase I Environmental Site Assessment (Phase I ESA), Phase II Environmental Site Assessment (Phase II ESA), Pipeline Oil Spill Prevention and Response Plan, Pollution Prevention (P2) Plan, Spill Prevention Control and Countermeasures (SPCC) Plan, and Water Withdrawal Registration.

It is required that the facility contact, meet, and work with the Indiana Department of Environmental Management (IDEM) prior to applying for the Air construction and operation permits. Although not required, it is strongly recommended that the facility work closely with both federal and state organizations during all design, permitting, and construction phases.

Based on the design data available it is highly recommended that as part of the site selection process, the facility should be located in an area that will adequately facilitate the daily volume of discharged water without causing harm to human life or the environment due to flooding.

During the review of the potential permits and environmental studies, some exceptions to the requirements were identified;

- A RCRA hazardous waste storage permit will not be required so long as no hazardous waste is stored at the facility over ninety days. The facility will however be required to register as a hazardous waste generator and will be required to obtain a federal identification number.



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- A Sanitary Sewer construction permit will be required only if the facility needs to construct a sewer extension for the disposal of sanitary waste.
- A Solid Waste permit will not be required unless the facility wishes to establish solid waste disposal onsite. The facility will however be responsible for identifying and characterizing its wastes so as to properly dispose of them.
- A Phase II ESA will only have to be conducted if the results of the Phase I ESA identify any potential contamination issues at the site.
- An Oil Spill Prevention and Response Plan will only be required if the facilities pipeline system meets the regulatory specified length, diameter, and proximity to public water supply or environmentally sensitive area.
- A SPCC Plan will only be required if the facility meets a specific storage capacity for petroleum products.
- The facility will have to register with the Indiana Department of Natural Resources (IDNR) as a significant water withdrawal facility if the facility is designed with the capacity to withdraw water at a rate equal to or greater than 100,000 gallons per day.

It should be noted that if the facility receives any federal funding or if a federal organization has a significant vested interest in the project, it will be the responsibility of the federal agency to make the necessary provisions to comply with the National Environmental Policy Act (NEPA). Based on relevant experience, it can be expected that federal involvement will require that an Environmental Impact Statement be developed under the NEPA. Similarly, if the facility receives any federal funding or federal vested interest, it will also be required to construct a Pollution Prevention (P2) Plan.

The following tables list the permits and studies that may be required to construct the Coal-To-Liquids Plant.



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Coal-To-Liquids Plant Permitting Summary				
Permit	Regulation	Regulatory Agency	Estimated Timeframe	Approximate Cost
Air (construction and operation)	40 CFR 72 / 326 IAC 2	IDEM	18 Months	\$200,000
Gas Storage Well	40 CFR 144 / 312 IAC 16	IDNR	3 Months	\$11,000 Permitting only
IDNR Construction permit / flood control	IC 14-26 - IC 14-29	IDNR	2 Months	\$2,000-\$15,000
NPDES (wastewater, and storm water)	40 CFR 122 / 327 IAC 2	IDEM	21 Months	\$65,100
RCRA HW Storage	N/A <i>Permit required only if store HW > 90 Days</i>	IDEM / EPA	2 Weeks	\$100 to obtain HW generator ID (is NOT a permit)
Sanitary Sewer Construction	327 IAC 3	IDEM	2 Months	No permitting fee
Solid Waste	N/A	<i>Only required if operating waste disposal site</i>		
Storm Water Construction	327 IAC 15	IDEM	4 Months	\$796,650
Waters of the State (includes Wetland study)	Section 401 Water Quality Act	IDNR/IDEM/USACE	14 Months	\$31,000

Total Estimated Cost: \$ 1,118,850

CFR - Code of Federal Regulations

EPA - *United States* Environmental Protection Agency

HW - Hazardous Waste

IAC - Indiana Administrative Code

INDOT - Indiana Department of Transportation

IDEM - Indiana Department of Environmental Management

IDNR - Indiana Department of Natural Resources

N/A - Not Applicable

NEPA - national Environmental Policy Act

NPDES - National Pollutant Discharge Elimination System

P2 - Pollution Prevention

RCRA - Resource Conservation and Recovery Act

SPCC - Spill Prevention Control Countermeasure Plan

SWP3 - Storm Water Pollution Prevention Plan

USACE - United States Army Corp of Engineers



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Coal-To-Liquids Plant Specialized Assessments and Studies Summary				
Assessment	Regulation	Regulatory Agency	Estimated Timeframe	Approximate Cost
Archaeological Surveys /Cultural Resources	36 CFR 61 / 36 CFR 800	IDNR / State Historic Preservation Office	7 Months (and apply 6 months in advance)	\$172,000
Biological/Natural Resources /Natural Heritage Data	36 CFR 800	IDNR	10 Months (and apply 6 months in advance)	\$97,100
Geotechnical Evaluation	675 IAC 13	Indiana Fire and Building Code Enforcement	3 Months- Entire construction phase	Cost should be included in construction bid
NEPA	N/A	<i>Only required if facility receives federal funding.</i>		
Phase I Environmental Site Assessment	42 U.S.C. § 9601	Normally required by lending institution	3 Months	\$6,000-\$10,000
Phase II Environmental Site Assessment	42 U.S.C. § 9601	Normally required by lending institution	3 – 5 Months	\$6,000-\$12,000
Pipeline Oil Spill Prevention and Response Plan	49 CFR 190 – 49 CFR 199	INDOT	6 Months	\$12,000-\$16,000
P2 Plan	N/A	<i>Only required if facility receives federal funding</i>		
SPCC Plan	40 CFR 112	EPA	3-6 Months	\$10,000-\$12,000
Water Withdrawal Registration	IC 14-25-7-15	IDNR	2 Weeks	\$100

Total Estimated Cost: \$319,200

CFR - Code of Federal Regulations

EPA - *United States* Environmental Protection Agency

HW – Hazardous Waste

IAC - Indiana Administrative Code

INDOT - Indiana Department of Transportation

IDEM - Indiana Department of Environmental Management

IDNR - Indiana Department of Natural Resources

N/A – Not Applicable

NEPA – national Environmental Policy Act

NPDES - National Pollutant Discharge Elimination System

P2 - Pollution Prevention

RCRA – Resource Conservation and Recovery Act

SPCC - Spill Prevention Control Countermeasure Plan

SWP3 – Storm Water Pollution Prevention Plan

USACE - United States Army Corp of Engineers



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BACKGROUND AND ASSUMPTIONS

The following assumptions were used to determine the applicable environmental permitting requirements and environmental assessments that may be required to construct a Coal-To-Liquids Production Plant.

- Tentative site identified near Burns City area. The available property is very flexible with rolling topography + 80 feet with natural area drainage to the north. Site would provide 300 acres, or 4 sq. miles.
- Process 2,700 tons of coal per day.
- Proposed conceptual plant would generate approximately 71.8MW gross power.
- Allow for coal storage of 60 days at 3,000 tons per day.
- Railroad sidings as required for coal delivery and shipping slag, sulfur, CO₂, etc.
- Allow for bio-mass storage, space required but assume 20% of that for coal.
- Sufficient power generation to run all auxiliary equipment for the IGCC with 25 MWe net to the grid at all times.
- Balance of syngas to go to Fisher-Tropsch liquid fuel process.
- CO₂ to be captured with on site storage for a yet to be determined quantity with rail siding access.
- FT fuel to be further refined on site with distillation tower then piped 17 miles to a fuel terminal West of Switz City.
- Water for processes to come by pipe about one mile from the East from NSA Crane WWTP, and potentially also from Lake Greenwood (5 miles away from project site).
- Two gasifiers with space allowed for later installation for a third.
- Space allowed throughout the site with piping connections to allow for insertion of slip stream pull points for R&D projects which might need raw syngas, clean syngas, CO₂, etc.
- Site plan will allow for undeveloped space for future installation for
 - Hydrogen storage; and,
 - Syngas from third gasifier to be further processed to a natural gas substitute quality.

Additional references:

- 31 May 2007, A Feasibility Study for the Construction of a Fischer-Tropsch Liquid Fuels Production Plant with Power Co-Production at NSA Crane (Naval Support Activity Crane), Irwin, Bowen, Preckel, Zuwei Yu, Rupp, Hieb, Mastalerz.
- 15 January 2008, DRAFT Indiana Clean Energy Project Reference Plant Concept, SAIC Pittsburgh
- Table B3 M&E Balances for 2,700 TPD Coal-To-Refined F-T Liquids Plant



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PERMITTING REQUIREMENTS

Air Construction and Operation Permits

Applicability

The Indiana Department of Environmental management (IDEM) has jurisdiction over the regulation of air emissions in the State of Indiana as established in the Indiana Administrative Code. The Coal-To-Liquids Plant would be required to apply for Air permits. The applicable regulations are as follows:

- 326 IAC 2-2-2, Prevention of Significant Deterioration (PSD) Requirements.
Pursuant to 326 IAC 2-2-2(a), this plant would require a Major Source PSD Permit in order to construct.
- 326 IAC 2-7-2, Pursuant to 326 IAC 2-7-2(a)(1), this plant would require a Title V Air Quality Operating Permit in order to operate.
- 40 CFR 72, Subpart A, Acid Rain Program General Provisions
Pursuant to 40 CFR 72.6(b)(4)(ii), this plant would not be subject to the requirements of the Acid Rain Program.

Note that the PSD and Title V Permit applications can be reviewed by the IDEM concurrently. Therefore, permit application forms would only need to be prepared and submitted one time.

Public participation

The following regulations apply:

- Per 326 IAC 2-7-17(a), notice shall be made to all owners/occupants of land adjoining the plant boundaries within ten (10) working days after submittal of the permit application. The notice shall be in writing and include the date on which the application was submitted and a brief description of the subject of the application.
- Per 326 IAC 2-7-17(b), a copy of the permit application must be filed at a library in the county where the plant will be located no later than ten (10) days after submitting the application.
- Per 326 IAC 2-7-17(c), all Part 70 permit proceedings, including initial Part 70 permit issuance, significant modifications, minor modifications, and renewals, shall provide adequate procedures for public notice, including offering an opportunity for public comment and a hearing on the draft Part 70 permit as outlined in this rule.

Major PSD Permit Application Required Data and Information

The following forms must be completed and submitted with the air permit application to the IDEM. The forms are located electronically at

<http://www.in.gov/idem/publications/forms/index.html#airforms>

- Air Forms, Permit Branch, General Source Data
- Air Forms, Permit Branch, Process Information
- Air Forms, Permit Branch, Control Equipment
- Air Forms, Permit Branch, Compliance Determination for Part 70 Sources



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Air Construction and Operation Permits (continued)

- Air Forms, Permit Branch, Best Available Control Technology (BACT)
 - An individual Best Available Control Technology (BACT) Analysis form should contain information regarding only one pollutant-facility combination; therefore, a facility with multiple pollutants subject to BACT would have multiple BACT Analysis forms for that facility.
 - Must provide the following summary information regarding the top existing BACT Determinations from five sources with a facility similar to your own. Note that the applicant should not limit the search to facilities identical to the proposed facility; the applicant should consider technology transfer applications as well. List these determinations in top-down order from the most to the least effective in terms of emission reduction potential/lowest emission rate (i.e., Source A should have the most stringent BACT Determination, and Source E should have the least stringent BACT Determination).
 - A Cost/Economic Impact Analysis must be completed for each BACT option. This includes equipment costs, direct installation costs, indirect installation costs, capital costs summary, total annual costs (direct and indirect), and recovery credits. Includes: Cost Effectiveness – Must provide the overall cost effectiveness in dollars per ton of pollutant removed for the referenced BACT analysis.
 - An Environmental Impact Analysis is required for each BACT option. Environmental impacts of the BACT option consist of effects other than impacts on air quality standards due to emissions of the regulated pollutant in question (e.g., solid or hazardous waste generation, discharges of polluted water from a control device, visibility impacts, or emissions of other regulated or unregulated pollutants).
 - An Energy Impact Analysis is required for each BACT option. Energy impacts are the difference between the baseline total project energy requirements (without the BACT option being considered) and the projected total project energy requirements with the BACT option implemented.

The following studies must be completed and submitted with the air permit application to the IDEM:

- 326 IAC 2-2-3, Control technology review. The Plant must apply best available control technology (BACT) for each regulated pollutant that meets the significant thresholds outlined in the definitions.
- 326 IAC 2-2-4 Air quality analysis; requirements. Requires air modeling.
- 326 IAC 2-2-5 Air quality impact; requirements. Requires air modeling.
- 326 IAC 2-2-6 Increment consumption; requirements. Requires air modeling
- 326 IAC 2-2-7 Additional analysis; requirements. Requires air modeling



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Air Construction and Operation Permits (continued)

Schedule

The following schedule is based upon relevant experience as well as pre-established timeframes.

- Schedule a meeting with the IDEM prior to filling out the Air permit application or commencing any relevant studies.
- Air permitting application preparation and modeling completion timeframe is approximately 6 months.
- Pursuant to 326 2-1.1-8, the IDEM shall approve or deny the application within two hundred seventy (270) days (9 months) – (for the PSD construction permit).
- Pursuant to 326 IAC 2-7-18, the USEPA is given 45 days for review, which runs concurrently with the 30 day public comment period. The IDEM must wait an additional 15 days to complete the USEPA review before proceeding with the final review of the permit and forwarding for approval – (for Title V operating permit).

Timeframe for permit review and approval is estimated at 18 months.

Cost

Pursuant with the Indiana Code (IC) IC 13-17, the following air permitting fees apply:

- Filing Fee: \$100
- Title V Permit with Major New Source Review (PSD: Prevention of Significant Deterioration): \$7,500
- Control Technology Analysis Fees: (according assumptions = 10+ BACT Analyzes): \$12,500
 - (for 2 to 5 control units): \$4,375
 - (for 6 to 10 control units): \$7,500
 - (for 11 or more control units): \$12,500
- NSPS Review: \$625 for each review (expecting worst-case 6 reviews): \$3,750
- Public hearing: \$625
- Modeling: \$40,000 (assuming remote potential for air quality impact on Class I area, which is over 200 km from site location – however, if requested by IDEM, additional cost: \$15,754)
- Labor \$96,000

Reoccurring Costs (Not included in the permitting estimate)

- Annual Title V Permit fees:
(326 IAC 2-7-19)
\$1,875 + \$41.25 per ton of pollutants emitted (to a maximum of \$187,500)

Total Air permit fees (including labor estimates) approximately: \$200,000

Gas Storage Well Injection Permit

Applicability

The current scope of work does not include carbon dioxide sequestration underground. The following permit information is included for reference only. Permits for gas storage wells are issued and administered in Indiana by the Department of Natural Resources (IDNR) Division of Oil and Gas <http://www.in.gov/dnr/dnroil/> in accordance with 312 IAC 16. At least one gas



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storage well-and one gas storage observation well would be required at the site if they were to utilize this technology. Both wells could be included on the same permit. The permit would require an Indiana certified well-survey to be submitted with the permit.

If desired, a test hole could be drilled. If the test hole will be over 200-feet deep, then a separate permit would be required to drill the test hole.

All well completion data would need to be turned in to the IDNR. If a test hole is drilled, the test hole information will also need to be turned over to IDNR and the test hole will need to be closed in accordance with regulation. A verbal or written approval of closure (prior to closure) will need to be obtained from IDNR.

Schedule

The following schedule is based upon relevant experience as well as pre-established timeframes.

- Notify the Indiana Geologic Survey 48-hours prior to drilling the well or test hole. DNR may ask applicant to retain the boring cores to be stored in a repository.
- Oil, Gas, Gas Storage/ Observation permits take about 4 to 5 working days to process. (Expedited permits in these categories take less than 2 days).
- Conduct certified well survey and construct permit: one month.
 - Once the permit is approved, the permit expires in 1-year unless drilling commences. If drilling commences within the year, the permit is valid indefinitely.
- The permit will be reviewed by the IDNR every 5-years.

Timeframe for permit construction, review and approval is estimated at 3 months.

Cost

This is the cost associated with permitting only. It does not include the cost estimate to drill the well, take core samples, geophysically log the well, or write geologic descriptions. The well survey that is required by the permit will likely cost an estimated \$1,200 in addition to the permitting fees.

The known permitting fees pursuant to 312 IAC 16 are as follows:

Permit application fees 312 IAC 16-3-2

- An applicant shall remit with the application a permit fee of two hundred fifty dollars (\$250) in cash, by check, or by draft, payable to the department of natural resources.
 - However, a person may apply for an expedited review of the application for a permit except for a Class II or noncommercial gas well by submitting a permit fee of seven hundred fifty dollars (\$750).



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Gas Storage Well Injection Permit (continued)

Bonding fees 312 IAC 16-4-2 are required at the time of the permit for each well. Bond types include:

- A surety bond in the amount of two thousand five hundred dollars (\$2,500) for each well drilled or produced.
- A cash bond in the amount of two thousand five hundred dollars (\$2,500) for each well drilled or produced.
- A certificate of deposit in the principal amount of two thousand five hundred dollars (\$2,500) for each well drilled or produced, according to terms and specifications provided by the division.
- A surety bond in any amount for wells drilled, deepened, or converted; however, the maximum number of wells under the bond may not exceed that number determined by dividing the principal sum of the bond by two thousand five hundred dollars (\$2,500).
- A blanket bond of forty-five thousand dollars (\$45,000) for any number of wells drilled, deepened, or converted.

Test Hole Permitting Fees

- The test hole permit application fee is \$100
- Submit a bond not exceeding one thousand dollars (\$1,000) for each test hole drilled; or;
- Submit a blanket bond not exceeding five thousand dollars (\$5,000) for all test holes drilled by the applicant during the duration of the bond.

Labor

- Fill out permit application and supervise subcontractors \$3,000

Reoccurring Annual Fee (not included in permitting estimate): In accordance with 312 IAC 16-3.5-2 there will be an annual fee for each well:

- For one (1) permit, (\$150).
- For two (2) through five (5) permits, (\$300).
- For six (6) through twenty-five (25) permits, (\$750).
- For twenty-six (26) through one hundred (100) permits, (\$1,500).
- For more than one hundred (100) permits, (\$1,500) plus fifteen dollars (\$15) for each permit over (\$100).

Total gas storage well permit fees (including labor estimates and well survey) approximately: \$11,000.



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IDNR Construction Permit / Flood Control

Applicability

Construction involving alteration water bodies including ditches, creeks, stream, rivers, lakes, reservoirs, etc. or construction in flood plain areas will require a completed Permit Application for Construction be submitted (State Form # 42946) to IDNR. More information including examples of completed applications can be found at

http://www.in.gov/dnr/water/permits/application_manual/relatedinfo.html

Schedule

The schedule will depend on the detail and availability of information required to fill out the permit. It is estimated that the permitting process will take 2 months.

Cost

Associated application fees depend on the particular FEMA flood zone rating and type of water body affected. The cost associated with construction and development of the permit application will vary greatly and depend on availability of documentation, exact structural locations and availability of 401 program data. Costs associated with applying for a water diversion/control structure include:

- Application fee \$50.00 to \$200.00.
 - This will depend on the particular water body being utilized.
- Permit construction and development is estimated between \$2,000 to \$15,000.
 - Depends on data availability and documentation.

Total water diversion / control structure permit fees is approximately: \$15,000.

National Pollutant Discharge Elimination System (NPDES)

Applicability

The purpose of the National Pollutant Discharge Elimination System (NPDES) program is to control the discharge of pollutants into the waters of the state such that the water quality criteria prescribed in 327 IAC 2 is maintained. This is achieved by the issuance of NPDES permits which contain specific effluent limits and operational requirements. Any facility discharging pollutants from any point source into waters of the state of Indiana, must apply for a NPDES permit from IDEM. The NPDES permit program is authorized by Section 402 of the Clean Water Act. NPDES permits are issued by the State of Indiana through a memorandum of agreement with the U.S. Environmental Protection Agency.

In accordance with section 316(b) of the Clean Water Act, if the facility plans to install and utilize a water intake from which 2.0 million gallons per day (MGD) will be withdrawn from a body of water and at least 25% of that water is utilized for the purposes of cooling water, that facility must design construct, and comply with EPA Phase I (new facilities) requirements. New facilities with smaller cooling water intakes will still be regulated on a site-by-site basis.

Following issuance of the NPDES permit, the facility will be required to develop and implement a Storm Water Pollution Prevention Plan (SWP3) in accordance with 40 CFR 122.26. A checklist of the items to be included in the SWP3 can be found online at <http://www.in.gov/icpr/webfile/formsdiv/51287.pdf>.



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National Pollutant Discharge Elimination System (NPDES) (continued)

It would be prudent that facility design personnel take into consideration a means for the treatment and/or disposal of sanitary wastewater. If the facility does not plan on connecting to a local treatment authority, a small scale treatment facility will need to be constructed. The construction of a sanitary wastewater treatment plant will require consideration in the permitting and discharge plan.

It should be noted that any impoundment constructed to collect water from, among other sources, coal pile runoff, should be designed to contain the capacity of at least a 10 to 25-year storm event based on the total area draining to the impoundment. As the facility design becomes closer to finalization, discussions should commence regarding the installation of treatment/conveyance structures to facilitate treatment.

Additionally, it is highly recommended that, site selection and facility design personnel work closely with the IDNR and local flood control authorities in order to ensure that the topography and drainage conveyance system at the proposed site are sufficiently sized to not cause flooding and will be capable of handling the facilities daily discharge volumes without causing harm to human health or the environment.

Permitting Requirements

IDEM may issue facilities either a general or individual NPDES permit based upon the nature of the wastewater and/or the type of industrial activity. Due to the nature of the proposed facility, a general NPDES permit (Rule 6 storm water, Rule 8 cooling water or Rule 9 petroleum terminals) will not be applicable. Therefore, an individual permit will be required. The permit will include all point source discharges including, but not limited to those derived from storm water runoff, process wastewater, maintenance, and cooling. The facility will most likely be given the title of major discharger as opposed to a minor discharger. This classification will be made by IDEM and is based on such things as nature and quantity of pollutants discharged, character and assimilative capacity of the receiving waters, presence of toxic pollutants in the discharge, and compliance history of the discharger (not applicable in this instance). Specific items used to develop the permit criteria will include the following:

If the facility engages in the refining of petroleum products:

- The facility would be permitted with a Standard Industrial Classification (SIC) code of 2911- Petroleum Refining and be subject to the Water Quality Based Effluent Limitations contained in 327 IAC 2, 327 IAC 5, and the Federal Effluent Guideline in 40 CFR 419. Therefore review and approval of the final permit by the US EPA Region 5 would be required.

If the facility is a steam electric power generator:

- The facility would be permitted with a Standard Industrial Classification Code (SIC) of 4911- Steam Electric Generator and be subject to the Water Quality Based Effluent Limitations contained in 327 IAC 2, 327 IAC 5, and the Federal Effluent Guidelines in 40 CFR 423. Therefore, review and approval of the final permit by the US EPA Region 5 would be required.



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National Pollutant Discharge Elimination System (NPDES) (continued)

According to 40 CFR 122.44 and 327 IAC 5, NPDES permit limits are based on technology-based limitations, where applicable, best professional judgment, and Indiana Water Quality-Based Effluent Limitations (WQBELs), whichever is most stringent. The decision to limit or monitor specific parameters will be based on information contained in the submitted application.

Required Permit Application Data

In order to obtain the required individual NPDES discharge permit, the facility must submit an NPDES permit application package. In the case of this particular proposed facility, the package will include a 2D application package and a 2F application package.

2D Application Package – New Sources / New Dischargers (EPA Form # 3510-20-2D)

This package requires the submittal of very detailed information relating to the facility. The application must include, at a minimum, the following information

http://www.in.gov/idem/permits/water/wastewater/industrial/application_rev_1st.html:

- List of outfalls showing the outfall number, Lat./Long., and receiving stream
- List of outfalls showing the outfall number, the operation(s) contributing flow to that outfall, the average flow from that outfall, a description of the treatment applied to the wastewater generated from that outfall with the corresponding code from Table 2c-1 of the application.
- Line drawing showing the flow of water into, through and out of the various processes that generate the wastewater.
- List of intermittent or seasonal discharges per outfall which includes:
 - The outfall number
 - A description of the process contributing the wastewater flow
 - The frequency of the flow in days/week and months/year
 - The flow rate long term average and daily maximum
 - The total volume of flow long term average and daily maximum
 - The duration of the discharge in days
- The production rate which is applicable to a process which is subject to an effluent guideline that is calculated based on the production rate.
- The production rate is expressed in the quantity per day, the units of measurement, the product which is produced, and the affected outfalls.
- The applicant must provide analytical results for all pollutants listed in Group A of Table 2D-2 of the application.



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National Pollutant Discharge Elimination System (NPDES) (continued)

- The applicant must provide analytical results for the pollutants listed in Group B of Table 2D-2 which the applicant believes to be present in the discharge and for pollutants which are limited by an applicable effluent guideline.
- A list of the pollutants listed in Table 2D-3 of the application which the applicant knows or has reason to believe is discharged or may be discharged through an outfall.
- The applicants shall state why the pollutant is believed to be present and/or provide any analytical data which shows the pollutant to be present.
- A list of the names and locations of existing facilities which resemble this facility with respect to production processes, wastewater characteristics and treatment.
- Other information relative to any previous part of the application which the applicant believes should be brought to the attention of the permit writer.
- The name, title, phone number, signature and date signed of the person who is filing the application

2F Application Package – Industrial Storm Water (EPA Form # 3510-2F)

This package will be supplementary to the 2D package and requires the submittal of detailed information including but not limited to structural facility design, construction plans, drainage maps, pollutant sources, non-storm water sources, potential contaminants, chemical analysis, and specific storm event data. The aforementioned information must be submitted along with the following completed forms:

- EPA Form 1- General Information From (EPA Form # 3510-1)
- Identification of Potentially Affected Parties (State Form # 49456)

Schedule

The following schedule is based upon past experiences as well as pre-established timeframes

- Permit application preparation: 8 months
- IDEM application review, permit generation: 270 days
- IDEM Public notice period: 30 days
- IDEM issuance: 2 to 3 Months
 - Depending on level of comment received from public notice period.

Depending on the availability of information during application preparation process and any comments received during the public comment period the timeframe for permit review and approval: 21 Months

After NPDES permit is approved, prepare and implement SWP3 Plan

- SWP3 Preparation and implementation: 10 to 11 months



Evaluation Of the Environmental Requirements to Construct and Operate a Coal-To-Liquids Plant

National Pollutant Discharge Elimination System (NPDES) (continued)

Cost

Based on relevant past experiences and the fees listed in the permit application checklist on the IDEM website, http://www.in.gov/idem/permits/water/wastewater/industrial/2d_link.html the costs are as follows:

- 2D application fee: \$50
- 2F application fee: \$50
- 2D and 2F Application Preparation Labor: \$30,000
- SWP3 preparation and implementation: \$35,000

Reoccurring annual NPDES discharge fees (not included in estimate)

- \$240 for discharges of less than 0.050 MGD,
- \$3600 for discharges of more than 1.0 MGD,
- \$28,300 for discharges of 50.0 MGD or more.

Total NPDES cost (including labor estimates and applicable studies required by the permit) approximately: \$65,100.

RCRA Hazardous Waste (HW) Permit / HW Generator ID

Applicability

A Resource Conservation and Recovery Act (RCRA) Hazardous Waste Permit would not be required if hazardous wastes are not accumulated on-site for over 90-days. If it is determined that the facility will require hazardous waste storage for greater than 90-days, a RCRA permit will need to be applied for.

According to RCRA, if you are a Small Quantity Generator (SQG) or Large Quantity Generator (LQG) manifesting waste for disposal, you must obtain a RCRA ID Number. RCRA ID Numbers can be obtained by completing EPA Form 8700-12 and submitting it to the IDEM.

Based on the Feasibility Study for the Construction of a Fischer-Tropsch Liquid Fuels Production Plant with Power Co-Production at NSA Crane (Naval Support Activity Crane) May 31, 2007 and research conducted on similar Coal Gasification operations, the following wastes/products would be generated:

Carbon Beds

Carbon beds contaminated with significant concentrations of Mercury (and other possible toxins) from the coal “syngas” would currently have to be managed as hazardous waste. The facility would not be required to obtain a RCRA Hazardous Waste Permit (40 CFR 270) if the waste is accumulated on-site for less than the time periods provided in [40 CFR 262.34](#), given that the waste is placed in containers and the generator complies with the applicable requirements of subparts I, AA, BB, and CC of [40 CFR 265](#).

The carbon beds would not be considered a waste until removed from the system and designated as no longer useful for their original purpose. Once the decision has been made to discard the carbon beds, at that point they become a hazardous waste. The waste can be stored on-site for a period of 90-days or less before being sent for disposal.



Evaluation Of the Environmental Requirements to Construct and Operate a Coal-To-Liquids Plant

RCRA Hazardous Waste (HW) Permit / HW Generator ID (continued)

Slag (ash)

This will be the primary solid waste generated from the coal gasification process. Slag is considered a “mineral processing waste”, and is exempt under RCRA requirements ([40 CFR 261.4\(b\)\(7\)\(ii\)\(F\)](#)). Since the slag is inert, it will either need to be disposed of in a landfill or marketed for reutilization.

- Slag from coal-fired plants has exclusion from RCRA Subtitle C as a “fossil fuel combustion waste” (Bevill waste)
- Slag from coal gasification is covered as a “mineral processing waste”, if feedstock is >50% coal
- If <50% coal, must show that the slag passes appropriate tests to show it is not hazardous

Sulfur

The sulfur in coal can be recovered and sold for fertilizer production and industrial processes. Pure sulfur generated from the coal gasification process should not be considered a waste, as it can be reutilized in various other processes.

Used Oil

Used oil will be recovered by an oil/water separator and stored (in accordance with the Standards for the Management of Used Oil [40 CFR 279](#)) until ultimately removed for disposal or recycling.

Schedule

The application for a hazardous waste generator ID takes approximately 2 weeks.

Cost

There are no associated fees with applying for a hazardous waste generator ID.

- Complete application EPA Form 8700-12: \$100.00.

Sanitary Sewer Permit

Applicability

Based on the information received, there are no plans to construct and operate a wastewater treatment plant. Based on this information, it is interpreted that the facility will need to connect itself to local sewer system. If the facility needs to construct a sewer extension for the disposal of sanitary waste, the professional engineer must do the following in accordance with 327 IAC 3-2.1-3:

- Seek approval from the local utility
- Complete a sewer design summary
- Complete an application form (State Form # 53159)
- Submit a stamped set of plans
- Submit a list of affected parties

Schedule

Permit approval takes approximately 30 to 40 days.



Evaluation Of the Environmental Requirements to Construct and Operate a Coal-To-Liquids Plant

RCRA Hazardous Waste (HW) Permit / HW Generator ID (continued)

Cost

There is no cost associated with the sanitary sewer permit application. There will however be costs associated with design, construction, materials, labor, etc. These costs are not accounted for in this report.

Solid Waste

Applicability

Based on the information available, waste generated from the site will include municipal solid waste and industrial waste, including slag, coal ash, and industrial waste from bag houses (also see RCRA HW Permit / HW Generator ID section above). Per the current descriptions, the proposed project does not involve the construction and operation of a waste disposal site; therefore, a waste disposal permit is not necessary. The project site will however be required to identify the characteristics of the waste streams and properly dispose of them.

Municipal Solid Waste

Municipal solid waste (i.e. office waste, paper, plastic, etc) can be collected in dumpsters and disposed of in an offsite landfill by a contractor.

Industrial Waste

For industrial waste, the project site owner will be required conduct a waste characterization of each type of industrial waste according to [329 IAC 10-7.1](#) and the by IDEM Waste [Determination Guide](#) . Industrial waste not meeting the characteristics of a hazardous waste may be disposed of offsite at a permitted landfill approved for industrial waste. The project owner will be responsible for providing all sample analysis information to the landfill for verification.

Storm Water Construction Permit

Applicability

In accordance with [327 IAC 15-5](#) any "project site owner" engaged in construction-related activities (meaning any manmade change of the land surface, including removing vegetative cover that exposes the underlying soil, excavating, filling, transporting, and grading) that disturb one (1) or more acres of land may be required to obtain a "Rule 5" storm water runoff permit. Construction of the Coal Gasification Plant will require a Rule 5 Construction Permit from the Indiana Department of Environmental Management (IDEM). Information to comply with Indiana's Rule 5 requirements can be found at

<http://www.in.gov/idem/catalog/factsheets/wa-634-fs.html>.

To obtain the permit, the project site owner must complete the following steps:

- File a Construction Plan with the county Soil and Water Conservation District (SWCD)
- Publish a Public Notice in the local paper
- File a Notice of Intent (NOI)
- Begin construction and implement Construction Plan
- File a Notice of Termination (NOT) with IDEM at the conclusion of the project



Evaluation Of the Environmental Requirements to Construct and Operate a Coal-To-Liquids Plant

Storm Water Construction Permit (continued)

Construction Plan

Before any land disturbing activities can take place, the project site owner must submit a Construction Plan to the county Soil and Water Conservation District (SWCD),

If the project site owner has not received a construction plan review approval verification form, or "construction approval document," after twenty-eight (28) days, they may go ahead and submit their NOI to IDEM. However, if the NOI is submitted with a "notification of plan receipt" instead a construction plan review approval verification form, or "construction approval document", the project site owner still will be responsible for revising his or her Construction Plan, if it is found deficient

Requirements for a Storm Water Construction Plan are described in [327 IAC 15-5-6.5](#) Information for a Construction Plan include (but not limited to):

- A description of the project
- The street address and also the legal (surveyor's) location
- Soil properties
- Identification of any other state or federal water quality permits required for the project
- Site layout with wetlands, water bodies, flood plains, soil maps, and contour maps
- Grading plans
- Drainage plans
- A Storm Water Pollution Prevention Plan. Some of the things required by this plan are:
 - Details regarding all temporary and permanent storm water quality measures
 - Temporary and permanent stabilization plans and their sequence of implementation
 - A construction sequence linking implementation activities to the various stages of construction
 - A description of the self-monitoring plan and procedures
 - A post-construction storm water pollution prevention plan

If the Construction Plan is not found sufficient by the Soil and Water Conservation District (SWCD), the project site owner must work with the SWCD to modify the Construction Plan as necessary until it meets the requirements of the rule. If the project site owner begins land disturbing activities at the project site after being notified that the Construction Plan is deficient, it is a violation of the rules and is subject to enforcement action.

Public Notice

A public notice is required to be filed in a paper with distribution in the project area that identifies the location of the project and the project owner's intent of construction and preparation of a Notice of Intent. The NOI form can be obtained online from: <http://www.in.gov/icpr/webfile/formsdiv/47487.pdf>



Evaluation Of the Environmental Requirements to Construct and Operate a Coal-To-Liquids Plant

Storm Water Construction Permit (continued)

Notice of Intent

The NOI letter must be submitted to IDEM at least forty-eight (48) hours prior to any soil disturbing activity. Some of the information to be included in the NOI letter is described below:

- Name and location (street address) of the site
- Project site owner's contact information (or their designated contact person)
- Brief description of the construction project and its size (in acres)
- Estimated dates to begin and end construction
- Legal (surveyor's) description of the site location as well as the site location's latitude and longitude
- A list of all MS4 (Municipal Separate Storm Sewer System) areas within which the project is located
- Written certification by the project site owner that all storm water quality requirements will be addressed by the Construction Plan, and that the plan will be implemented as stated, and inspected by trained personnel. (Individuals trained and experienced in the principles of storm water quality, including erosion and sediment control as demonstrated by a state registration, professional certification, experience, or completion of coursework that enables the individual to make judgments regarding storm water control or treatment and monitoring.)
- The name(s) of the receiving body, or bodies, of water

The NOI must be accompanied by:

- Proof of publication in a newspaper of general circulation
- Application fee
- Construction Plan review approval form from the SWCD.

Notice of Termination (NOT):

At the conclusion of construction and once vegetation has been established for more than 75% of the area, the project owner will file a [Notice of Termination](#) form to IDEM that states the construction is complete.

Schedule

The following schedule is based upon past experiences as well as pre-established timeframes.

- Compliance with Rule 5 requirements will need to begin at least four months prior to construction.
- Develop Construction Plan: minimum six weeks
- Submit Construction at least 28 days prior to construction;
 - Note: More time is recommended to respond to any deficiencies that may be identified.
- Submit NOI at least 48 hours in advance of construction activities but after the public notice has been filed in the local papers.

Timeframe for permit preparation, submission, review and approval is estimated between 6 and 7 months.



Evaluation Of the Environmental Requirements to Construct and Operate a Coal-To-Liquids Plant

Storm Water Construction Permit (continued)

Cost

Costs associated with complying with Rule 5 requirements will include:

- Cost of development of the Construction Plan - \$25,000.00
- Correspondence with Regulatory agencies – \$1,500.00
- Application fee submitted with NOI - \$100.00
- Cost of public notice in the local paper – \$50.00
- Cost of monitoring and inspections of inspections – \$20,000
- Cost of implementing erosion control requirements – This should be included in site construction requirements but figure – \$750,000 (i.e. silt fencing, straw bales, matting, and hydro-seeding 150 of the total 300 acres)

Total estimated costs for storm water construction/runoff application are \$796,650.

Water of the State/Wetlands

Applicability

Prior to construction of a facility, two packages must be sent to IDNR describing the proposed site location along with a detailed project description; one for a Natural Resource impact assessment and one to request a copy of the Natural Heritage data for the project site. The IDNR will review the two packages and provide guidance as to what permits will be required, who the facility should contact to obtain the permits, and/or provide an in-stream construction waiver (if applicable). If during the two reviews the IDNR determines that the construction of the facility will impact the waters of the state i.e., installing culverts in ditches, piping in streams, or clearing wetlands, the IDNR will require that the facility apply for the appropriate permits with the IDEM and the United States Army Corp of Engineers (USACE). See the Natural Resources summary in the “specialized assessment and studies” section for details on submitting the two data packages to IDNR for review.

After the results of the two IDNR assessments are received, the facility must apply for a section 401 Clean Water Act (CWA) water quality certification from IDEM. To do this, the facility must submit the results of the two IDNR assessments, along with any other applicable study information, to the IDEM and a duplicate package to the United States Army Corp of Engineers (USACE) requesting the appropriate permits.

Surveys

It is recommended that at the onset of the project, a wetlands delineation be performed. This will identify any necessary potential wetlands and streams on the project site. Identification of wetlands in the project site may require additional time and planning purposes for mitigation. If the delineation identifies wetlands, the survey will need to be forwarded to the USACE regional office for certification. IDEM will require that USACE approved delineation be submitted with the applicable permits.

Potential Permits

To obtain IDEM 401 water quality certification, the applicant will have to apply for one of two sets of permits depending on how much impact the construction of the facility will have on the waters of the State. For low impact sites (i.e. less than 0.1 acre of wetland, or less than



Evaluation Of the Environmental Requirements to Construct and Operate a Coal-To-Liquids Plant

300 linear feet of stream), the applicant will be required to apply for a regional general permit notification to IDEM and a National Permit from the USACE.

Water of the State/Wetlands (continued)

To obtain IDEM 401 water quality certification for sites that impact a significant area and/or if any natural resources impacts are identified within a half-mile of the project area, the site will have to apply for an individual 401 Water Quality Permit (Application for Authorization to Discharge Dredged or Fill Material to Isolated Wetlands and/or Waters of the State) from IDEM and a section 404 dredge and fill permit from the USACE.

Until the final facility construction design is received, it is uncertain as to the exact applicable permits that will be required to comply with the CWA. Therefore, both sets of potential permitting scenarios are outlined below.

Section 401 WQC Regional General Permit Notification Form

[State Form 51937 (R / 10-07) (IDEM)/ National Permit (USACE)]

To obtain 401 water quality certification for sites that will have minimal disturbance to the waters of the United States, the facility will have to apply for a regional general permit from IDEM and qualify for a national permit from the USACE. To qualify for a regional general permit, and a national permit, the project must meet the Terms and Conditions as identified by IDEM at the following website:

<http://www.in.gov/idem/programs/water/401/rgpconditions.html>.

Examples of qualifying conditions inclusive but are not limited to the following:

- Proposed project will impact less than 0.10 acres of waters of the US;
- Project will impact less than 300 linear feet of streambank or lake shoreline;
- Project will not permanently change the sinuosity, flow path, velocity, cross sectional area under the bank or the slow of any stream;
- There are no endangered plants or animals within one half mile of the project site;
- Projects involving stream encapsulation activities must meet the following conditions:
 - Must be for the purpose of constructing a crossing;
 - Must not exceed 150 feet;
 - The cross sectional area of the encapsulation is at least twenty percent (20%) larger than the bank full area of the stream immediately up and downstream of the encapsulation;
 - The cross sectional area of the encapsulation is in the form of a single opening(double culverts are not authorized unless at least one of the culverts meets the cross sectional area requirement);
 - Encapsulations either have no bottom (e.g., three sided culvert) or are twenty percent (20%) imbedded into the streambed (note that the area imbedded must be subtracted from the cross sectional area for the cross section area requirement above); and
 - The slope of the bed within the encapsulation matches the slope of the bed both immediately upstream and downstream.



Evaluation Of the Environmental Requirements to Construct and Operate a Coal-To-Liquids Plant

Water of the State/Wetlands (continued)

Activities meeting the terms and conditions of the regional general permit notification may complete the notification form found on IDEM's website at:

<http://www.in.gov/icpr/webfile/formsdiv/51937.pdf>. Send the application form and associated documents to the IDEM for review and approval. To apply for the USACE national permit, send a duplicate copy of the IDEM general permit notification application to the USACE Regional Office for review.

The following documents should be included with both permit applications:

- Location map
- Drawings of existing site and proposed project
- Cross section of proposed activities showing extent of fill waterward
- Cross sections of proposed activities showing the bankfull width of the stream
- At least three photos of the site
- Copy of a certified wetlands delineation report (for projects with wetlands impacts)
- Copies of all correspondence from the U.S. Army Corps of Engineers (for projects with wetland impacts)
- Copies of all correspondence from the Indiana Department of Natural Resources, Division of Nature Preserves (Natural Resource and Natural Heritage Data)
- Copies of all Correspondence/waivers from the Indiana Department of Natural Resources, Division of Water

Section 401 Water Quality Permit Application for Authorization to Discharge Dredged or Fill Material to Isolated Wetlands and/or Waters of the State [State Form 51821 (R/10-04)] (IDEM)/ Section 404 Dredge and Fill Permit (USACE)

Projects not meeting then terms and conditions under the regional general permit will be required to obtain an Individual Section 401 Water Quality Certification (WQC) from IDEM as well as a Section 404 U.S. Corps of Engineers permit.

To obtain the 401 WQC, the project owner must complete an application for Authorization to Discharge Dredged or Fill Material to Isolated Wetlands and/or Waters of the State. A copy of the application can be found at: <http://www.in.gov/icpr/webfile/formsdiv/51821.pdf>. The application must be submitted with the following material:

- A wetlands delineation of all wetlands on the project site (for projects with wetlands impacts)
- At lease three photographs of the project site. Indicate the photo locations on the project plans.
- If isolated wetlands are present, a letter from the Corps of Engineers verifying this statement.
- Wetland mitigation plan and monitoring report
- Classification of all isolated wetland on the tract (if isolated wetlands are present on-site)
- Copies of all local permits and/or resolutions pertaining to the project or tract
- Tract history



Evaluation Of the Environmental Requirements to Construct and Operate a Coal-To-Liquids Plant

Water of the State/Wetlands (continued)

To apply for the USACE 404 Dredge and Fill permit, the project owner will have to submit the IDEM_Application for Authorization to Discharge Dredged or Fill Material to Isolated Wetlands and/or Waters of the State with the USACE Dredge and Fill permit.

The USACE application be found at the following address:

<http://www.lre.usace.army.mil/functions/rf/html/ENG4345.pdf>. The application material must be accompanied with a:

- Vicinity Map
- Plan View
- Typical Cross-Sectional Map

Schedule

Based on relevant experience and pre-established agency timeframes, the following schedule is estimated:

- Wetlands Delineation: 4 months.
 - Field work: 2 weeks.
 - Finalized Report: 2 months.
 - Army Corps of Engineers certification (if site-specific wetlands are identified): 1 month.
- 401 WQC Regional General Permit (IDEM) / National Permit (USACE): 3 months.
 - Gather information and complete application package: 2 weeks.
 - Submit applications to IDEM and USACE 30 days prior to construction.
 - IDEM/USACE review of application from time it is received: 1 month.
 - If response is not received within 30 days, project is authorized.
- 401 Water Quality Permit (IDEM) / Section 404 Dredge and Fill Permit (USACE): 10 Months.
 - Gather information and complete application package: 2 weeks.
 - Submit package 4 to 5 months prior to construction.
 - IDEM review of application from the time it is received: 9 months.
 - Note: IDEM will not review the package until it feels the application is complete. If IDEM identifies any deficiencies in the initial application, the applicant has 1 month to revise it. After the package is revised, the IDEM has another 4 months to review the corrected package.
 - The worst case scenario would include IDEM taking 4 months to review the initial application package and submitting deficiencies to the applicant. The facility takes 1 month to revise the package, and the IDEM takes another 4 months to review the final package.

The total estimated timeframe to complete the Clean Water Act water quality certification process: 7 – 14 months.



Evaluation Of the Environmental Requirements to Construct and Operate a Coal-To-Liquids Plant

Water of the State/Wetlands (continued)

Cost

The following costs are associated with obtaining the Clean Water Act Water Quality Certification.

- Wetlands Delineation: \$25,000
- Wetlands Mitigation Plan:
 - Cost is unknown at this time, there are too many variable that factor into the cost of mitigation plan.
 - Only required if applying for Individual Section 401 Water Quality Permit/ 404 Dredge and Fill Permit.
- Preparation of Regional General Permit Notification: \$2,000.
- Preparation of an Individual Section 401 Water Quality Permit: \$5,000
 - Does not include cost of preparing mitigation plan if necessary.
- USACE Permit (National Permit OR Dredge and Fill Permit fee: Minimum \$100
- There are no fees required for IDEM permit applications.

Total costs associated with obtaining the correct Water Quality permits (not including a wetland mitigation plan): \$27,100 to \$30,100 (\$31,000).



Evaluation Of the Environmental Requirements to Construct and Operate a Coal-To-Liquids Plant

SPECIALIZED ASSESSMENTS AND STUDIES SUMMARY

Archeological/Historical

Applicability

The construction of a Coal-To-Liquids Plant will require coordination with the State Historic Preservation Officer (SHPO). Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. §470f) and the federal regulations that implement Section 106 (36 C.F.R. Part 800) require that whenever any federal agency proposes to conduct, fund, license, grant a permit for, or otherwise approve an undertaking (a program, project, or activity) that by its nature has the potential to affect historic properties, the federal agency must conduct a review of the proposed project's effects in conjunction with the State Historic Preservation Officer and, under certain circumstances, with another federal agency, the Advisory Council on Historic Preservation (the Council), and other interested individuals or organizations, called consulting parties.

While the proposed project is not a federal activity, it will require both Federal and State issued permits. Based on the information listed above, this requires coordination between agencies to conduct a historical property review.

<http://www.in.gov/dnr/historic/106process.html>.

The project lead/point of contact is required to consult with the Indiana Department of Natural Resources (IDNR) - Division of Historic Preservation and Archaeology, preferably through written correspondence. A checklist that documents the required components of the consultation letter can be found online at

<http://www.in.gov/dnr/historic/adobepdf/106informationneeded.pdf>.

The written correspondence must be typed on company letterhead and should include:

- Complete and accurate description of the project, including interested parties
- Written or electronic authorization for the applicant or consultant to correspond to SHPO
- Visual or written description of the undertaking's area of potential effects
- A Map (USGS quad, aerial, plat, etc) that clearly identifies the location of undertaking and any buildings structures, and objects in the area
- Approximate Dates of construction and any known historical significance
- A description of existing conditions of vacant land that will be disturbed by construction and if there were previous ground disturbing activities.
- Sources of information about buildings, structures, and objects and about the conditions of vacant land (recommend referencing the applicable county interim report)
- Recent photographs of any buildings, structures, or objects

The response letter from the SHPO will identify if archeological surveys are needed or if they are approved to proceed with the project (no archeological survey).



Evaluation Of the Environmental Requirements to Construct and Operate a Coal-To-Liquids Plant

Archeological/Historical (continued)

Surveys

In the event the SHPO response letter indicates that the project requires an archeological investigation, a qualified professional expert as defined in 36 CFR Part 61, must to complete the survey and prepare all of the necessary reports. The Indiana Department of Natural Resources (IDNR) – Division of Historic Preservation maintains a list of consultants that meeting the professional requirements. This list can be found at:

http://www.in.gov/dnr/historic/bin/qp/qp_archo.pdf.

Schedule

The following schedule is estimated base upon relevant experience and pre-established timeframes.

- The correspondence package will take approximately 20 hours to develop over the course of 2 weeks.
 - The correspondence and coordination package with the SHPO should be developed and sent to SHPO at least 6-months prior to projected construction.
- The SHPO has 30 days to review the submitted package and issue a response.
- If the SHPO indicates that an archeological survey is needed, the survey team will need 3 months to complete the field work and another 2 months to prepare the report.

A worst case scenario in which all of the studies are required and the maximum review time is utilized, the archeological/historical study and survey will take approximately 6 months (not including the 6 months in advance to submit the package).

Cost

Costs associated with project include the cost of preparing a letter of and application material to the SHPO and any necessary surveys identified by the state. Costs Include:

- Package development and correspondence – \$2,000
- Archeological Survey \$120,000 to \$170,000
 - This estimate depends on the site and the specific requirements dictated by the state.

Total estimated costs associated with the archeological/historical site evaluation are \$172,000.

Natural Resources

Applicability

The Indiana Department of Natural Resources (IDNR) must be contacted prior to site construction activities in order to coordinate efforts with IDNR and to identify any necessary agency required permits. Two separate review requests need to be submitted to IDNR describing the proposed plans for the site; A natural resources review package and a natural heritage data package request.



Evaluation Of the Environmental Requirements to Construct and Operate a Coal-To-Liquids Plant

Natural Resources (continued)

The Natural Resources review identifies if construction of the facility will impact any navigable waters of the State. The Natural Heritage Data package identifies federal and state endangered, threatened, and rare species, high quality natural communities, and significant natural areas in Indiana. Both packages should include a complete project description, a USGS Quad Map with the site boundaries outlined, the UTM coordinates of the proposed location, and photography and/or aerial photographs if available.

Once the IDNR has reviewed the data packages, they will inform the applicant of all of the natural resource impacts created by construction at the proposed site location and make a determination if any further permits or studies are necessary. These studies, as part of the permitting process, may include an impact study to endangered species or critical habitat, impact to wetlands, impacts to streams, and so forth. If the IDNR identifies that site construction will impact navigable waters of the State, the site will be required to notify and/or apply for the appropriate construction permits with IDEM and/or the United States Army Corp of Engineers. At this time, if applicable, the IDNR will provide any in-stream work waivers. Note that identification of impact to any natural resources within a half-mile of the project area will require the project owner to submit an individual 401 Water Quality Permit and not the regional permit notification. See the Water of the State/Wetland Construction Section for permit details regarding impacts to navigable waters.

It is highly recommended to coordinate efforts with the IDNR during the design phase of the project to determine any applicable permits or studies that will need to be conducted prior to construction. A description of IDNR's early coordination requirements can be found at: <http://www.in.gov/dnr/water/permits/pdf/EnvironmentalReviewRequiredinfo.pdf>.

Schedule

The following schedule is based upon past experiences as well as pre-established timeframes.

- Collection of information and preparation of Natural Resources impact review to IDNR: 1 week
- Collection of information and preparation of Natural Heritage data package request to IDNR: 1 week
- Review of the Natural Resources impacts by IDNR: 30 days.
- Review of the natural Heritage data package by IDNR: 30 days.
 - A timeframe for review of the packages by IDNR is not identified in their official guidance; however, a minimum of thirty days is generally required.
 - To avoid project delays due to requirements identified by the IDNR, it is recommended that the coordination package be submitted at least 6 months prior to start of construction.
 - Submit both packages at the same time.
- Endangered species study (if required) 8 months.

Total estimated timeframe for IDNR data package and any potential studies is 10 months.



Evaluation Of the Environmental Requirements to Construct and Operate a Coal-To-Liquids Plant

Natural Resources (continued)

Cost

The costs include construction of the notification packages and any studies or plans that may be necessary as identified by the IDNR. Estimated costs may include:

- Correspondence preparation Natural Resources review request: \$1,000
- Correspondence preparation Natural Heritage data request: \$1,000
- IDNR National Heritage Data Package construction fee: \$84
 - IDNR charges \$42 / half hour
- Endangered Species studies if required by IDNR: \$95,000

Total estimated costs for IDNR Natural Resources Investigation and potential studies is: \$97,100.

Geotechnical Investigation

Applicability

In accordance with Indiana Building Code (675 IAC 13), prior to complete construction of the facility, the site will require sampling and evaluation of stress/shear/compaction tests on asphalt, grading, foundations, etc. A geologic technician will conduct a site visit, take the samples, run the tests in their lab, and submit a certified report. While this is not an environmental regulation, it is included as supplemental information. The cost of the geotechnical evaluation should be included in the construction bid package.

Schedule

Based on relevant experience and the size of the project, this phase could take anywhere from 3 months through the entire length of the construction phase of the project. Samples may be taken and tested intermittently throughout facility development. The materials being tested will determine how long it will take to run a test and provide a report. In general, each set of samples and report should take:

- One set of sampling and report: 3 months
 - May take several sample sets and reports spread out over the construction of the facility to complete this phase.

Total timeframe for geotechnical investigation can range from 3 months through entire construction phase.

Cost

Costs depend on how large the site is and how many samples will be required.

- Cost should be included in the construction quote.

This is not an environmental expense.



Evaluation Of the Environmental Requirements to Construct and Operate a Coal-To-Liquids Plant

National Environmental Policy Act (NEPA)

Applicability

As it is currently described, funding, construction, and operation of the Coal-To-Liquids Plant will be a private operation. As such, the requirements of the National Environmental Policy Act (NEPA) do not apply since it is only applicable to activities undertaken by the federal government or supported with federal funding. If no federal agency assists in the operation of the Plant and if no federal funds are received, there is no requirement to prepare an Environmental Impact Statement.

In the event that federal funding is involved or a federal agency has a significant interest in the project, completion of the NEPA document is the responsibility of the federal agency. It can be assumed that by the scope of the project and from similar projects performed by the federal government, the NEPA documentation to support the coal gasification project would require an Environmental Impact Statement (EIS). Preparation, review, and approval of the EIS would be the responsibility of the federal agency supplying the funding.

Schedule

If an EIS was required, the schedule would be as follows:

- Conduct study and develop EIS report: 2 years.
- Construction and site activities would have to wait until the NEPA documentation is finalized and signed.

Cost

If an EIS was required, based on relevant experience and pre-established timeframes the cost would be approximately:

- EIS package study and report: \$1,000,000 and \$2,000,000.

Phase I Environmental Site Assessment (Phase I ESA or Phase I)

Applicability

The Phase I Environmental Site Assessment (Phase I ESA or Phase I) establishes a baseline environmental assessment for a property and identifies any potential issues with surrounding properties in a specific radius to determine if the surrounding properties potentially could have impacted the desired site. It is intended to provide assistance to users in satisfying the appropriate inquiry element of CERCLA's innocent purchaser defense, as defined in 42 U.S.C. § 9601(35)(B). The Phase I separates any potential past contamination issues from any potential future contamination issues and is normally required by lending institutions prior to loan approval. The Phase I ESA may lead to a Phase II Environmental Site Assessment (geologic investigative study) depending on the outcome of the Phase I (See next section). The study will need to be certified by a licensed geologist or licensed engineer.

The Phase I ESA is based on ASTM E1527-05 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process [ASTM E1527-05](#). For additional information on how to conduct a Phase I ESA refer to: Technical Aspects of Phase I/II Environmental Site Assessments: 2nd Edition [ASTM MNL43](#)



Evaluation Of the Environmental Requirements to Construct and Operate a Coal-To-Liquids Plant

Phase I Environmental Site Assessment (Phase I ESA or Phase I) (continued)

The Phase I ESA report will include several studies. The studies will include but are not limited to the following:

- **Previous Land Use Study** – Aerial photographs, Sanborn Maps, tax maps, and historical address books will be consulted to determine the history of the property. In order to evaluate the full history of the site, the site and its surrounding properties within a specified radius will be researched and reported from the time the property was undeveloped until the present. The following are sources for satellite imagery:
 - EROS Data Center – managed by the USGS, the EROS Data Center is a repository for NASA’s Landsat photographic and multi-spectral images and the US Department of the Interior’s aerial photographic collection.
 - National Archives – Holds aerial photography from prior to 1942.
 - Sequential aerial photos survey – used to access natural or man-made changes to topography and drainage over a period of time, and should focus on solution features, lineaments, erosion, seeps and vegetative changes.
 - Local Soil and Agriculture Satellite offices – normally have aerial photographs of the State.
- **Topographic Maps** – A topographic map (1:24,000 scale maps and 1:250,000 scale maps, among others) of the site will be evaluated to determine overland flow of the property and surrounding properties to identify if the property may have impacted or may have been impacted by adjacent properties. Surface waters, wetlands, and springs (if any) will be identified. *Although not a requirement of the Phase I, including water quality, usage, section gain and loss, reservoir capacity, and 100 year flood zones in this section would likely aid in the site selection process. This information will also be included in the storm water permitting process.*
 - The Indiana Geological Survey website <http://www.igs.indiana.edu/> allows access to all state topographic maps. They can be downloaded from the GIS section of the website. Hard copies of the maps can be purchased at the Indiana Geological Survey, 611 N. Walnut Grove Road, Bloomington, IN 47401.
- **Soil Maps** – Soil maps will be consulted to evaluate the general drainage of the property. The Soil Conservation Service of the Department of Agriculture has county-wide soils maps showing soil type, engineering characteristics, and chemistry of surficial materials to a depth of six feet.



Evaluation Of the Environmental Requirements to Construct and Operate a Coal-To-Liquids Plant

Phase I Environmental Site Assessment (Phase I ESA or Phase I) (continued)

- General Geologic Research – A literature review will be conducted to determine the regional, surficial, and subsurface geology, stratigraphy, geomorphology, structural geology, geophysical characteristics, and any underlying extractable mineral deposits of the property. Regional maps can be obtained from the IGS. Some of the pertinent searches should include:
 - GEOREF – Computerized bibliography of North American geology from 1961 maintained by American Geological Institute (AGI).
 - KWIC – (keyword in context) – index of rock mechanics literature.
 - GEODEX Retrieval System – summary of geotechnical literature.
 - Comprehensive Dissertation Index – A listing of doctoral dissertations from 1861.
 - USGS Annual Summary – a summary of all types of literature produced by the United States Geological Survey for the previous year.
 - Indiana State Geological Survey – references pertaining only to the state of Indiana.
 - Seismic Survey – The Indiana Geological Survey is the best source for information on seismicity, capable faults and historic earthquakes. The Indiana state emergency management agency is a good source for risk assessment maps of the state.
 - Consult available drill lithology logs to note whether coal, sandstone, gravel, or other resources that can be mined reside below the surface. *Although not a requirement of the Phase I, these logs can be used to construct cross sections showing the thickness of underlying units.*
- Well Census Study –A study of all types of wells on the property and surrounding properties that may impact water availability or water quality of the site. The wells need to be identified as to whether they are residential, public, manufacturing or agricultural wells. Identifying monitoring wells in the adjacent areas are often an indication that there is groundwater contamination in the area. *Although it is not a requirement of the Phase I, it would be beneficial to site selection to include water quality, depth to aquifer, type of aquifer, casing size, well depth, likelihood of encountering perched or intermittently saturated zones above the water table, etc. The data compiled for each aquifer should include porosity, transmissivity, storativity, permeability, discharge and recharge, probable flow direction, and ground- to surface water relationship. Conceptual models can be made using available data. Even though this project will not be using water from the underlying aquifer, this information is important to have on hand in the event of a hazardous spill during construction or operation.*



Evaluation Of the Environmental Requirements to Construct and Operate a Coal-To-Liquids Plant

Phase I Environmental Site Assessment (Phase I ESA or Phase I) (continued)

Schedule

Phase I's can be rushed and done in as little as one month but a more normal turn around time would be 3 months. A typical schedule resembles:

- Order data package of property + surrounding properties (Environmental Data Resources Package + Sanborn's) prior to site visit <http://www.edrnet.com/index.php>.
- Site visit (site walk, photos, identification of any potential issues with property that can be seen) Time for this phase depends on how large the property is, if the property is industrial/residential/underdeveloped, property accessibility, travel, etc.: 1 day
- Conduct interview(s) with property owner (preferably in person but can be done over the phone) 1 day
- Research (libraries, soil surveys, aerial research, tax ID research) Time for this phase depends on proximity of research locations and extent of research. 1 to 7 days
 - A Phase I containing non-required information will longer.
- In-house research (geologic/hydraulic/hydrogeologic background, topographic analysis): 1 to 3 days.
- Report write up: 2 weeks.

Total timeframe to conduct Phase I ESA including non-required but recommended studies: 3 months.

Cost

The cost for a Phase I ESA can range between \$6,000 and \$10,000. For more accurate cost estimate would need to know if the property is developed or undeveloped, labor rates, mileage to and from site, mileage to and from various locations to gather information (places to view aerials, library for historical research, research parcel tax ID, etc. to give exact cost).

Total estimated cost of a Phase I ESA is \$10,000.

Phase II Environmental Site Assessment (Phase II ESA or Phase II)

Applicability

The Phase II Environmental Site Assessment (Phase II ESA or Phase II) is the geological site investigation to confirm or refute any potentially identified historical contamination issues identified in the Phase I with regard to the site in question. It is intended to provide assistance to users in satisfying the appropriate inquiry element of CERCLA's innocent purchaser defense, as defined in 42 U.S.C. § 9601(35)(B). The Phase II is a limited site investigation; it is not meant to quantify the full extent of any contamination and it does not satisfy the level of inquiry that may be necessary to support remedial solutions for a site. This type of extensive study would be a separate environmental investigation.

A Phase II ESA will only have to be conducted if Phase I investigation identifies any potential impacts to the site in question. For example, if an industrial site had a metal pickling line it may be recommended to sample the soil and groundwater for Volatile Organic Compounds, or if the site used to be farmland it may be recommended to sample the soil and/or groundwater for herbicides and pesticides. The Phase II is normally required by lending institutions prior to loan approval only if a Phase II ESA is recommended at the close of the Phase I report. The study will need to be certified by a licensed geologist or licensed engineer.



Evaluation Of the Environmental Requirements to Construct and Operate a Coal-To-Liquids Plant

Phase II Environmental Site Assessment (Phase II ESA or Phase II) (continued)

Phase II assessments are normally used for price negotiation when purchasing a parcel of land. Often it can be put into the property transaction who will remain liable for any environmental complications from previous contamination (i.e. historical contamination issues remain with the seller) or if the buyer is comfortable with the level of contamination they can negotiate a lesser price for the tract of land and become the liable party for any residual contamination.

The Phase II is based on ASTM E1903-97(2002) Standard Guide for Environmental Site Assessments: PHASE II Environmental Site Assessment Process [ASTM E1903-97](#) Additional information can be obtained in the: Technical Aspects of Phase I/II Environmental Site Assessments: 2nd Edition [ASTM MNL43](#).

Schedule

Phase II's depend on what potential contamination issues are identified at the site. They depend on what is being sampled for, are the samples going to be sent normal or rush turn around time, labor to take the samples, does a subcontractor need to be hired, is there going to be any environmental screening, and how extensive is the study, etc. It would take longer to conduct a Phase II for an industrial facility then it would for a farm. A safe estimate would be 3 to 5 months. A typical schedule resembles:

- Determine what is being sampled for and how many samples / set up any necessary subcontractors, purchase any necessary equipment. 1 month
 - Depends on availability of subcontractors if they are required.
- Sampling: 1-2 days
 - This sampling event is not meant to be a full environmental investigation.
 - Normally time for this phase depends on travel, are you limited by the subcontractor's equipment, decontamination time, how many samples, etc.
- Sample results (unless the samples were sent rush turn around time): 1 month
- Report write up: 2 weeks

Total timeframe to conduct a Phase II ESA is estimated to be: 3 to 5 months.

Cost

The cost depends on what the samples are, how many there are, are any subcontractors required to complete the job, and so forth. The average cost to drill into bedrock averages \$30.00/foot, not including the time for the driller and assistant. Typically the Phase II investigation is a small scale study and may only be between \$6,000 and \$12,000.

Estimated costs for a Phase II ESA is \$12,000.



Evaluation Of the Environmental Requirements to Construct and Operate a Coal-To-Liquids Plant

Pipeline Regulations (Oil Spill Prevention and Response Plan)

Applicability

In accordance with 49 CFR 190 – 49 CFR 199, Pipelines are regulated by the Pipeline and Hazardous Materials Safety Administration, Department of Transportation (PHMSA DOT). Tanker trucks and rail cars intended to travel to and from the site are also regulated by the DOT. United States Department of Transportation Pipeline and Hazardous Materials Safety Administration (U.S. DOT PHMSA) <http://www.phmsa.dot.gov>. Appropriate land easements will need to be obtained prior to pipeline construction.

The Pipeline Safety Division of the Indiana Utility Regulatory Commission does not issue permits to operators to construct their pipelines. However, the State of Indiana has pipeline construction guidance that should be followed. Pipelines, tanker trucks, and tanker rail cars will require provisions such as corrosion/cathodic protection, secondary containment, and visibly posted signs.

Prior to facility start-up, the facility may need to submit an Oil Spill Prevention and Response Plan (49 CFR 194) if it meets any of the following criteria.

49 CFR 194.103 A facility must submit a pipeline response plan if:

A line section can be expected to cause significant and substantial harm to the environment in the event of a discharge of oil into or on the navigable waters or adjoining shorelines if; the pipeline is greater than 65/8 inches (168 millimeters) in outside nominal diameter, greater than 10 miles (16 kilometers) in length, and the line section—

- (1) Has experienced a release greater than 1,000 barrels (159 cubic meters) within the previous five years,
- (2) Has experienced two or more reportable releases, as defined in § 195.50, within the previous five years,
- (3) Containing any electric resistance welded pipe, manufactured prior to 1970, operates at a maximum operating pressure established under § 195.406 that corresponds to a stress level greater than 50 percent of the specified minimum yield strength of the pipe,
- (4) Is located within a 5 mile (8 kilometer) radius of potentially affected public drinking water intakes and could reasonably be expected to reach public drinking water intakes, or
- (5) Is located within a 1 mile (1.6 kilometer) radius of potentially affected environmentally sensitive areas, and could reasonably be expected to reach these areas.

After construction of the pipeline, numerous pipeline inspections, integrity tests, and forms must be filled out as required by PHMSA. An annual report must be submitted for each type of hazardous liquid pipeline facility operated at the end of the previous year. A separate report is required for crude oil, HVL (including anhydrous ammonia), petroleum products, and carbon dioxide pipelines. The forms are located online at

<http://ops.dot.gov/library/forms/forms.htm>



Evaluation Of the Environmental Requirements to Construct and Operate a Coal-To-Liquids Plant

Pipeline Regulations (Oil Spill Prevention and Response Plan) (continued)

PHMSA Forms (accidents/incidents/annuals)

- PHMSA F 7000-1 Accident Report for Hazardous Liquid Pipelines
- PHMSA F 7000-1-1 Annual report for Hazardous Liquid or Carbon Dioxide Systems.
- PHMSA F 7100.1 Incident Report for Gas Distribution System
- PHMSA F 7100.1-1 Annual Report for Gas Distribution System
- PHMSA F 7100.2 Incident Report for Gas Transmission and Gathering Systems
- PHMSA F 7100.2-1 Annual Report for Gas Transmission and Gathering Systems

PHMSA Forms (inspections/evaluation/qualification)

- PHMSA Form-1 Standard Inspection Report of a Gas Transmission Pipeline
- PHMSA Form-2 Standard Inspection Report of Gas Distribution Operator
- PHMSA Form-3 Standard Inspection of a Liquid Pipeline Carrier
- PHMSA Form-4 Standard Inspection Report of an LNG Facility
- PHMSA Form-5 Evaluation Report of Gas Pipeline & Compressor Station Construction
- PHMSA Form-6 RESERVE
- PHMSA Form-7 Evaluation Report of Liquid Pipeline Construction
- PHMSA Form-8 RESERVE
- PHMSA Form-9 RESERVE
- PHMSA Form-10 Breakout Tank Inspection Form
- PHMSA Form-11 Pipeline Failure Investigation Report
- PHMSA Form-12 Gas Storage Field Review
- PHMSA Form-14 Operator Qualification Inspection Form
- PHMSA Form-15 Operator Qualification Field Inspection Form
- PHMSA Form-17 Supplemental SCC Questionnaire Gas Transmission or Liquid Pipeline
- PHMSA Form-18 Evaluation of LNG Facility Siting, Design, Construction and Equipment
- PHMSA Form-19 Hazardous Liquid IMP Field Verification Inspection

Schedule

If the facility meets the requirements listed above, developing a Pipeline Response Plan would take approximately 3 to 6 months to develop. The Plan will need to be revised every 5 years or within 30 days of a significant change in the Plan. The annual DOT reports/inspections should be submitted to the US DOT, Office of Pipeline Safety (Washington DC). This estimate does not include the time to conduct periodic inspections, fill out forms, provide maintenance, and conduct integrity tests.

If required, constructing a Pipeline Response Plan would take between 3 and 6 months.

Cost

There are no fees associated with submitting a Pipeline Oil Response Plan. It is estimated that construction of an engineer certified Pipeline Oil Response Plan would cost approximately \$12,000 to \$16,000 depending on the linear footage of pipeline.

If required, a Pipeline Oil Response Plan would cost approximately \$16,000.



Evaluation Of the Environmental Requirements to Construct and Operate a Coal-To-Liquids Plant

Pollution Prevention Plan

Applicability

Unless the facility is a federally run facility or federally funded facility, there is no requirement to have a Pollution Prevention Plan. Currently the scope indicates that the facility will be privately funded.

In the event that the facility becomes federally operated or federally funded, a Pollution Prevention Plan will need to be constructed.

Schedule

In the event a Pollution Prevention Plan needs to be constructed, it would take approximately 3 months to develop a Plan for the facility.

Cost

In the event that a Pollution Prevention Plan needs to be developed, it would cost approximately \$6,000.



Evaluation Of the Environmental Requirements to Construct and Operate a Coal-To-Liquids Plant

Spill Prevention Control and Countermeasures Plan

Applicability

In accordance with 40 CFR 112, if there is liquid petroleum product storage capacity in Underground Storage Tanks (UST) at the site equal to or in excess of 42,000-gallons and/or there is liquid petroleum product Aboveground Storage Tank (AST) capacity equal to or greater than 1,320-gallons, then the facility would need to develop a Spill Prevention Control and Countermeasures Plan. Petroleum Storage capacity at the facility needs to be finalized prior to determining if the 40 CFR 112 regulation is applicable. Additionally the facility must separate the difference between flow-through process tanks, tanks used for storage, and tanks used to run equipment, prior to determining if the Plant will be required to develop an SPCC Plan.

According to the referenced feasibility study, the only liquid petroleum tanks identified are an Oil Water separator and a used oil tank. Although not identified in the current facility details the site may eventually include other tanks such as petroleum product storage in rail cars, mobile tanker trucks, and back-up generators. If petroleum product will be stored in mobile tanker trucks and rail cars, a determination will need to be made as to if they are regulated by 40 CFR 112 or by the Department of Transportation. This will largely depend on if the rail cars and tanker trucks are stationary and mainly used for storage or if they are solely used for transportation to and from the site.

Schedule

The schedule for developing an SPCC Plan will depend on how extensive the Plan will need to be (if the Plan needs to be developed at all). If there are only a few tanks, the Plan should take approximately 3 months to construct. If the Plan is more elaborate, it could take approximately 6 months to develop and fully implement the Plan. The Plan will need to be submitted to the regional EPA and revised every 5 years or within 30 days of a significant change in the Plan.

The timeframe to develop a SPCC Plan is approximately 6 months.

Cost

There are no costs associated with submitting the Plan. Based on relevant experience, SPCC Plan development should cost approximately \$10,000 to \$12,000.

The cost to develop a SPCC Plan is approximately \$12,000.



Evaluation Of the Environmental Requirements to Construct and Operate a Coal-To-Liquids Plant

Water Withdrawal Registration (Significant)

Applicability

In accordance with IC 14-25-7-15 any facility designed with an overall water withdrawal capacity of equal to or greater than 100,000 gallons per day (including both surface water and ground water sources), must register with the Indiana Department of Natural Resources (IDNR) as a significant water withdrawal facility within 90 days after the beginning of use. To register the facility, fill out State Form 20094 (R3/8-98) [State Form 20094](#).

Schedule

Registering with the IDNR to withdraw water should take no more than 2 weeks.

Cost

There are no associated fees with registering as a significant water withdrawal facility, only labor to fill out the form. Fees are estimated to be \$100.00.

