

# Saskatchewan



Industry and  
Resources

Petroleum and Natural Gas Division

200, 2101 Scarth Street  
Regina, Canada  
S4P 2H9

September 22, 2006

Mr. Brian Hillier  
Plains Environmental Inc.  
Box 519  
MELVILLE SK S0A 2P0

Dear Mr. Hillier:

Re: Approval to Operate a Waste Processing Facility

Please find attached a copy of WPF No. 2006-02, *Approval to Operate a Waste Processing Facility*.

If you require further assistance regarding the waste processing facility approval, please contact Mr. Todd Han at 787-2221.

Sincerely,

A handwritten signature in black ink, appearing to read "Trevor Dark".

Trevor Dark  
Assistant Deputy Minister

Attachment

cc: Steve Rymes, Director, Industry and Resources  
Darwin Roske, Director, Industry and Resources  
Brian Mathieson, Director, Industry and Resources  
Todd Han, Assistant Director, Industry and Resources  
Dean Pylypuk, District Manager, Industry and Resources  
Debby Westerman, Sr. Engineer, Industry and Resources

APPROVAL NUMBER: WPF 2006-02

MINISTER'S APPROVAL

UNDER THE OIL AND GAS CONSERVATION REGULATIONS, 1985

TO OPERATE A WASTE PROCESSING FACILITY

Pursuant to section 108.2 of *The Oil and Gas Conservation Regulations, 1985* (the regulations), approval is granted to PLAINS ENVIRONMENTAL INC. (the company) to operate a Waste Processing Facility (the facility) located on Legal Subdivision 6 of Section 29, Township 22, Range 06 West of the Second Meridian, subject to the following conditions:

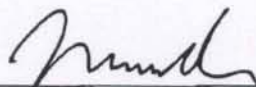
1. In order for the company to comply with all of the conditions specified in Saskatchewan Environment's Environmental Project Plan Review Clearance Letter titled, *Expansion of Acceptable Waste Streams, Plains Environmental's Melville Cavern Facility*, Project 2006-020 dated August 30, 2006, this approval rescinds and replaces Minister's Approval WPF 2004-02.
2. The company shall comply with all of the conditions specified in Saskatchewan Environment's Environmental Project Plan Review Clearance Letter titled, *Expansion of Acceptable Waste Streams, Plains Environmental's Melville Cavern Facility*, Project 2006-020 dated August 30, 2006.
3. The company is approved to receive, store, treat, recycle, dispose of or recover materials listed in Appendix 1, at the facility.
4. The company shall comply with all of the conditions specified in Minister's Order MRO 424/04 as amended from time to time.
5. The facility shall incorporate appropriate security measures to prevent unauthorized access. Warning signs that contain the operating company name, the legal land description and a 24-hour telephone number that can be used in the event of an emergency shall be posted.
6. Equipment spacing must conform to the regulations, except where permitted by written approval by Saskatchewan Industry and Resources (the department).
7. The company shall implement waste screening and recording procedures specified in Appendix 2.
8. Permanent groundwater monitoring wells shall be installed around the perimeter of the facility.

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9. Any change(s) to the facility which may affect the overall process or impact the environment requires prior approval from the department and/or any other agency having jurisdiction in relation to the change(s).
10. The company shall conduct annual groundwater monitoring and test for pH, conductance, total dissolved solids, hardness, alkalinity ( $\text{HCO}_3$ ,  $\text{CO}_3$ ), Ca, Mg, Na, K, Cl,  $\text{SO}_4$ ,  $\text{NO}_3+\text{NO}_2$  and total extractable hydrocarbons.
11. The company shall test brine water and oil returns for specific radioactivity at least once a year. The results shall be compared to the existing background radioactivity levels established by past tests to ensure that the injected Naturally Occurring Radioactive Materials are not returning to the surface.
12. The company shall carry out regular inspections of the facility, containment systems and equipment for leaks or failures and conduct required pressure testing, mechanical testing and/or visual inspection of pipelines from the facility to the disposal well.
13. The company shall submit monthly reports to the Petroleum Statistics Branch of the department, detailing upstream waste receipts, inventories, dispositions, recovered crude oil volumes and any other information as requested.
14. The company shall submit a written report to the Manager of Environmental Affairs, Petroleum Development Branch annually on or before March 31, for the period from January 1 to December 31 of the preceding year, which shall include:
  - (a) description of abnormal occurrences and corrective measures;
  - (b) any documentation and testing results required in condition 7;
  - (c) groundwater monitoring data as required in condition 10;
  - (d) NORM testing and comparison results as required in condition 11; and
  - (e) maintenance and inspection records as required in condition 12.
15. The company shall decommission and conduct post closure monitoring in a manner acceptable to the department.

Dated at Regina, Saskatchewan, September 22, 2006.



Trevor Dark  
Assistant Deputy Minister, Industry and Resources

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### Appendix 1 Wastes and Byproducts Acceptance List Criteria

#### Condition 1. Wastes and by-products which are acceptable:

- a. With exception of wastes specified in *Appendix 1 Condition 2*, the company may receive, treat, recycle, dispose of (via injection into the cavern) and recover the following wastes from in-province and out-of-province sources:
  - Hazardous and non-hazardous wastes and by-products generated from or associated with the upstream, mid-stream and downstream petroleum and petro-chemical industry that are compatible with the existing gas cavern injection and recovery operation.
  - Hazardous and non-hazardous hydrocarbon-contaminated wastes and by-products from the non-petroleum sector.
  - Hazardous and non-hazardous industrial wastes including:
    - Mineral oil, greases and lubricants,
    - Non-chlorinated solvents, sludges and organic solutions,
    - Paint wastes and sludges,
    - Ethylene glycol and glycol mixtures,
    - Creosote, creosote sludges and creosote-contaminated soils,
    - Fertilizer industry by-products,
    - Ethanol, bio-diesel, canola oil and fish oil processing wastes and similar materials and by-products, and
    - Metal-contaminated sludges from industrial sites, mining and transportation industries and gun ranges, and industrial sources.
  - The following specific leachable toxic waste substances may be received and disposed at the facility:
    - Materials contaminated with trace metals including barium, boron, cadmium, chromium, lead, mercury, selenium and arsenic;
    - Nitrates;
    - Benzyne, benzo-a-pyrene, creosols;
    - Non-chlorinated based organic substances; and
    - Non-pesticide based organic substances.
  - Naturally occurring Radioactive Materials (NORM) with a specific activity less than or equal to 300 kilobecquerels per kilogram per isotope.
- b. The company is responsible for complying with all applicable federal, international and other provincial regulatory requirements as it may pertain to all wastes originating from outside the province of Saskatchewan.

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**Condition 2. Wastes and by-products which are NOT acceptable:**

- a. The company shall not receive or dispose of:
- Naturally Occurring Radioactive Materials (NORM's) with specific activity greater than 300 kilobecquerels per kilogram per isotope.
  - Any liquids or solids with polychlorinated biphenyl (PCB) concentrations greater than 5 milliliter per litre or 5 milligrams per kilogram.
  - Any liquids or solids with total organohalogen concentrations greater than 100 milliliter per litre or 100 milligrams per kilogram. For industrial effluent and surface water, the total organohalogen shall be measured as Adsorbable Organic Halides (AOX) quantified by Neutron Activation Analysis; for liquid solutions it shall be measured as Total Organic Halides (TOX) quantified by Neutron Activation Analysis; and for solids it shall be measured as Extractable Organic Halides (EOX) through extraction with appropriate solvent then quantified by Neutron Activation Analysis.
  - Any substances that are liable to spontaneously combust on contact with water.
  - Any substances that on contact with water emit flammable gases.
  - Any oxidizing substances and organic peroxides.
  - Any infectious substances and bio-medical waste.
  - Any household or municipal refuse, garbage or sewage.
  - All "leachable toxics wastes" listed in the Section 3.27 Table of *The Transportation of Dangerous Goods Regulations* except for those listed in **Condition 1a**. The leachate concentrations in the "leachable toxic wastes" shall be determined by using *U.S. EPA Toxicity Characteristic Leaching Procedure (TCLP)*, Test Method 1311.
  - Spent sweeteners, scavengers, amines and associated matrices or containers that can liberate unsafe amounts of hydrogen sulphide (as specified in *The Occupational Health and Safety Regulations, 1996*) into the working environment under normal operating conditions at the facility, unless proper control systems and mitigating factors are incorporated at the facility.

## Appendix 2 Waste Screening and Recording Procedures

**Condition 1.** The company shall comply with the following minimum screening requirements:

- a. With exception of materials specified in *Appendix 2 Condition 2*, in-province upstream and mid-stream wastes or byproducts generated during normal (where it is reasonable to believe that the wastes and/or by-products are/were generated during what is normally accepted as standard industry practice and do not contain materials specified in *Appendix 1 Condition 2*) exploration, drilling, development, production, processing, transmission, transportation, storage, maintenance, operation, abandonment, decommissioning, reclamation, remediation and/or restoration of a well, well site or facility do not require to be tested or archived, unless otherwise specified by the department.
- b. With exception of materials specified in *Appendix 2 Condition 2*, out-of -province upstream and mid-stream wastes or byproducts generated during normal (where it is reasonable to believe that the wastes and/or by-products are/were generated during what is normally accepted as standard industry practice) exploration, drilling, development, production, processing, transmission, transportation, storage, maintenance, operation, abandonment, decommissioning, reclamation, remediation and/or restoration of a well, well site or facility shall be accompanied by reasonable documentation or verification to assure that materials specified in *Appendix 1 Condition 2* are not contained in the wastes or byproducts. A representative sample shall be taken from each load and held for a minimum period of three months upon reception of the wastes or the by-products.
- c. With exception of materials specified in *Appendix 2 Condition 2*, in-province and out-of -province downstream wastes or byproducts generated during normal (where it is reasonable to believe that the wastes and/or by-products are/were generated during what is normally accepted as standard industry practice) processing, transmission, transportation, storage, maintenance, operation, decommissioning, and/or remediation of a facility shall be accompanied by reasonable documentation or verification to assure that materials specified in *Appendix 1 Condition 2* are not contained in the wastes or by-products, unless otherwise specified by Saskatchewan Environment. A representative sample shall be taken from each load and held for a minimum period of six months upon reception of the wastes or the by-products.
- d. It is the company's responsibility to develop and implement screening process to ensure that wastes and by-products specified in *Appendix 1 Condition 2* are not processed or disposed of at the facility.

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**Condition 2. Mandatory Testing:**

Upstream Waste	Screening Parameter and Acceptance Criteria	
	Total Activity <sup>1</sup> <300kBq/kg per isotope	Sampling Frequency
NORM contaminated materials	required	each load

Legend:

<sup>1</sup>Pre-screening analysis of the total activity conducted by qualified laboratory prior to receiving the material at the facility.

**Condition 3.** As a minimum requirement, the company shall test the wastes and by-products intended for injection into the disposal well for the following parameters:

Parameter	Injection Criteria	Testing Frequency	Sample Type
pH	2.0 - 12.5	monthly	weekly samples composited over one month
EOC	≤100 mg/L	monthly	weekly samples composited over one month
lead (leachate if sample is a solid)	≤5.0 mg/L	monthly	weekly samples composited over one month
mercury(leachate if sample is a solid)	≤0.1 mg/L	monthly	weekly samples composited over one month

Legend:

- EOC means extractable organic chloride using appropriate solvent extraction and clean-up procedure then quantified by neutron activation analysis.

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**Condition 4.** NORM record keeping requirements as recommended by Saskatchewan Labour:

- a. Radioactive inventory for each NORM waste injection, including
  - date of injection and waste generator name,
  - radioactive concentration of each major NORM nuclides (from lab analysis),
  - total volume of waste injected, and
  - types of NORM waste injected (e.g., scale, sludge, soil).
- b. Radioactive inventory for each cavern until closure, including:
  - total activity of each major NORM nuclide, and
  - total volume of NORM injected.
- c. Surface facility radiological monitoring results, including:
  - date of sample collection and on-site location,
  - monitoring type (soil, dust, fence-line survey, cavern return fluids, groundwater),
  - radioactive concentration levels for target NORM nuclides, and
  - dose levels for fence-line surveys.
- d. Any other record-keeping requirements as identified in the **Technical Report on the Management of Naturally Occurring Radioactive Materials (NORM) in Waste.**