

STATE OF COLORADO

John W. Hickenlooper, Governor
Christopher E. Urbina, MD, MPH
Executive Director and Chief Medical Officer

Dedicated to protecting and improving the health and environment of the people of Colorado

4300 Cherry Creek Dr. S. Laboratory Services Division
Denver, Colorado 80246-1530 8100 Lowry Blvd.
Phone (303) 692-2000 Denver, Colorado 80230-6928
Located in Glendale, Colorado (303) 692-3090
<http://www.cdphe.state.co.us>



Colorado Department
of Public Health
and Environment

December 1, 2011

Mr. Gregory P. Fletcher
Senior Remediation Advisor
Suncor Energy (USA)
5801 Brighton Boulevard
Commerce City, CO 80022

RE: Notice of Determination: Order Requiring Additional Interim Measures
Compliance Order on Consent No. 07-05-25-01
Suncor Energy (USA) Inc.
Commerce City Refinery

Dear Mr. Fletcher:

On Sunday morning November 27, 2011, the Colorado Department of Public Health and Environment ("Department") received its first notice of possible surface water contamination near the confluence of Sand Creek and the South Platte River - a report of an oil sheen being visible on the water surface. The Tri-County Health Department was immediately notified and an inspector was sent out to verify the reported incident. The location given was visited that same day and the inspector was not able to confirm the presence of any oil sheen on the water. A second report of a possible release to Sand Creek was received by the Department the following day, confirming that oil was discharging into the creek, prompting immediate action by Suncor Energy and the Environmental Protection Agency ("EPA") to stop the release to this surface water body.

On Monday November 28, 2011 we received first notice of a possible situation involving vapors intruding into a building housing a laboratory on the Denver Metro Wastewater Treatment Plant property, which adjoins the Suncor Energy Commerce City facility. The vapors in the laboratory appear to be derived from petroleum hydrocarbons located in the subsurface.

These new developments only emphasize our limited understanding of the contamination present at the refinery, particularly beneath the northwest corner of the refinery that has migrated onto the adjoining Denver Metro Wastewater Treatment Plant. The contamination is evidently more extensive and mobile than originally believed and conditions in the subsurface may be changing in response to seasonal influences, all of which may have caused the contamination to express itself in the form of one or more seeps discharging into Sand Creek and vapors intruding into buildings overlying the plume.

On October 26, 2011, based on data Suncor Energy presented, the Department notified Suncor Energy of the need for additional work in response to investigations of what appears to be a recent release of hazardous waste and hazardous constituents that has migrated into offsite areas. Notwithstanding the specific work requirements and deadlines contained within the October 26, 2011 Notice of Additional Work Order, the Department believes additional actions are needed in response to recent events that indicate human health and the environment are in immediate peril due to the surface expression of this contamination where exposure pathways are now completed.

Pursuant to Paragraph 62 of Compliance Order on Consent No. 07-05-25-01, the Department hereby determines that additional work is required to protect human health and the environment and orders Suncor Energy to perform the following interim measures by the specified deadlines. This Order is effective upon receipt

1. Beginning December 2, 2011, Suncor Energy shall conduct daily inspections along Sand Creek between Brighton Boulevard and its confluence with the South Platte River, then south along the east bank of the South Platte River where it is in contact with the Denver Metro Wastewater Treatment Plant looking for any evidence of the surface expression of petroleum hydrocarbons. Any signs of a flowing discharge, seep or even a sheen must be reported immediately to the Department, followed by the collection and analysis of a sample of the liquid (whether product or surface water) for characterization purposes. Visible evidence of historic seeps or discharges of petroleum hydrocarbons that may now be inactive should also be reported. This inspection program shall continue until further notice. Once we are confident that there are no discharges along the South Platte River where it is in contact with the Denver Metro Wastewater Treatment Plant, we are willing to scale back the inspection of the river bank to only include the first 1000 feet of the river upstream of its confluence with Sand Creek. Written approval from the Department will be needed before such a modification can be implemented.
2. Suncor Energy shall establish surface water sampling points along the south bank of Sand Creek between Brighton Boulevard and its confluence with the South Platte River. These sampling points shall initially be not more than 500 feet apart (approximately 14 locations). A background surface water sample location shall be positioned just upstream of where Sand Creek begins to flow past its first contact with the facility. The surface water samples shall be collected using procedures previously approved by the Department, sampled for both volatile organic compounds and semivolatile organic compounds, with the test results provided to the Department by no later than December 15, 2011. The Department will review the data and determine to either add or subtract sample locations, to either continue testing for these two suites of compounds or to reduce it to only those constituents detected or that may exceed established standards, and the required frequency of continued sampling. Testing will be expanded to include the South Platte River if contaminants are present above standards in Sand Creek at its confluence with the river.

3. Suncor Energy shall immediately commence the process of securing access and sampling indoor air in all buildings located on the Denver Metro Wastewater Treatment Plant to determine indoor air quality. Testing will commence in the buildings closest to Sand Creek and the wastewater treatment plant's laboratory, progressing in a westward direction across plant. All air samples will be collected using procedures outlined in the Department's April 2000 "Guidance for Analysis of Indoor Air Samples (a copy of which can be found online at <http://www.cdphe.state.co.us/hm/airsmpl.pdf>), assuming an exposure duration of 10 hours during that time of day the building is normally occupied. Test results will be compared to the Department's action levels for worker exposure, including but not limited to the following constituents:

Chemical Abstracts No.	Chemical Name (IUPAC)	Risk Basis C=Cancer NC=Noncancer	Worker Action Level ($R=10^{-5}$, HI=1) ug/m ³
71-43-2	Benzene	C	16.0
100-41-4	Ethylbenzene	C	49
108-88-3	Toluene	NC	22,000
1330-20-7	Xylenes (Mixture/Total)	NC	440

Outdoor air samples shall also be collected concurrent with all indoor air samples to help distinguish the source of detected vapors, coming from either subsurface contamination and/or the surrounding atmosphere (background) derived from multiple anthropogenic sources within this area of the Denver basin. In response to any indoor air sample found to exceed the worker action level determined, by the Department, to be derived from a subsurface source, Suncor Energy shall, within 7 days, install and commence operating a subslab depressurization system capable of intercepting vapors before they can enter the building. Performance monitoring samples will need to be collected following the installation of any mitigation system for the purpose of documenting that indoor air action levels are not exceeded. All buildings on the Denver Metro Wastewater Treatment Plant shall be sampled and, if deemed necessary, mitigated by no later than December 31, 2011. Suncor Energy can petition the Department before that date to discontinue indoor air sampling if returning test results clearly indicate that buildings yet to be sampled are believed to be outside the footprint of the groundwater plume. All test results will be reviewed at that time to determine the frequency of indoor air testing for both performance and verification (peripheral to impacted areas) monitoring.

4. By no later than December 31, 2011 Suncor Energy shall have constructed and commenced operation of an engineered system that intercept all Light Non-Aqueous Phase Liquid (LNAPL) before it has an opportunity to daylight and enter Sand Creek

between its confluence with the South Platte River and groundwater monitoring well SSCMW-07. All recovered liquids will be collected and returned to the Suncor Energy facility for further treatment, reuse and/or disposal. This system shall be modified based on the findings of subsequent investigations required in this Order Requiring Additional Interim Measures and/or the October 26, 2011 Notice of Additional Work Order. This system will remain in operation until the Department determines that either evidence is presented showing that LNAPL is no longer migrating towards Sand Creek across the Denver Metro Wastewater Treatment Plant or it is replaced by some other Department-approved corrective measure.

5. Suncor Energy shall immediately begin investigating groundwater beneath the Denver Metro Wastewater Treatment Plant for two primary purposes. The first is to define all areas where the dissolved phase contamination is entering Sand Creek between its confluence with the South Platte River and groundwater monitoring well SSCMW-07. The second purpose is to define all areas where LNAPL may be entering Sand Creek between its confluence with the South Platte River and groundwater monitoring well SSCMW-07. This will require the installation of permanent groundwater monitoring wells that are screened at appropriate depth intervals using techniques previously approved by the Department that are sampled for both volatile organic compounds and semivolatile organic compounds. The spacing between monitoring wells shall not be more than 100 feet apart. Suncor Energy shall install the wells, sample each of them and provide a report to the Department with all laboratory test results by no later than March 1, 2012. The findings of this investigation will assist in determining whether other additional interim measures are imposed to stop the flow of LNAPL and dissolved phase contamination into Sand Creek. This interim measure does not supersede the offsite groundwater testing in paragraphs 5 and 6 of the October 26, 2011 Notice of Additional Work Order.
6. Suncor Energy shall cleanup all signs of staining by oil that may have coated the banks of both Sand Creek and the South Platte River, including soil and vegetation. This cleanup must be completed by no later than March 1, 2012.

The Department reserves the right to modify work requirements outlined in this letter and the October 26, 2011 Notice of Additional Work Order in light of the rapidly developing situation and all the new data that is in the process of being collected for the purpose of characterizing and halting the continued spread of the mobile contaminant plume exiting the downgradient corner of the facility.

If you have any questions regarding the technical aspects of the interim measures noted above, you may contact Robert Beierle of my staff at (303) 692-3368 or Robert.beierle@state.co.us. If you have questions regarding the legal aspects of this matter, you may contact Robert Eber of the Colorado Attorney General's Office at (303) 866-5034 or rob.eber@state.co.us.

Page Five
Mr. Gregory P. Fletcher
December 1, 2011

Issued this 1st day of December, 2011.



Walter Avramenko
Unit Leader, Hazardous Waste Corrective Action Unit
Hazardous and Solid Waste Program
Hazardous Materials and Waste Management Division

cc: Tri-County Health Department
Theresa Pfeifer, Denver Metro Waste Water
Robert Eber, Colorado Attorney General's Office
Curtis Kimbel, U.S. EPA Region 8
Margo Smith, U.S. EPA Region 8