Measurement Canada

Upstream Petroleum Trade Sector Review

Recommendations for Establishing an Appropriate Level of Measurement Canada Intervention in the Upstream Petroleum Sector

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1.0 Introduction

1.1 Purpose of the Report

This report contains the recommendations for establishing an appropriate level of intervention for Measurement Canada in the Upstream Petroleum Sector. These recommendations are the result of consultation with sector stakeholders to ensure the accurate measurement of unrefined petroleum products in the Upstream Petroleum Sector.

This report summarizes the views of the Upstream Petroleum Sector stakeholders established through consultations with the Upstream Petroleum Sector review team and provides Measurement Canada Senior Management with the supporting rationale and considerations behind each recommendation.

1.2 Sector Review Methodology

Beginning in December of 2002, the Upstream Petroleum Sector Review team contacted a sample of sector stakeholders individually, to obtain preliminary feedback on the Upstream Petroleum Sector. The information obtained was used to understand the Upstream Petroleum Sector and to determine Measurement Canada's role in the sector. The review team documented a draft set of recommendations based on the feedback received from the Upstream Sector as well as used the recommendations of the Downstream Petroleum and Natural Gas Sector Reviews that applied to similar stakeholders. The draft recommendations were forwarded to stakeholders for comment and subsequent updating. The final recommendations were presented at the Canadian School of Hydrocarbon Measurement for comment and acceptance. The final recommendation will be forwarded to the Measurement Canada Senior Management Committee for review. The Measurement Canada Senior Management will make the final decision on the acceptance, rejection or modification of the recommendations as well as the implementation of the recommendations for the Upstream Petroleum Sector Review.

1.3 Decision Making Criteria

Throughout the consultation, the team strived to achieve consensus among sector stakeholders for all recommendations. The following conditions were used to guide the consultation with stakeholders:

- general agreement from stakeholders on all recommendations;
- general support from third parties (those who are not parties to the trade transaction);
- all decisions/recommendations must be in line with Measurement Canada's strategic direction;
- all recommendations must be sustainable into the future;
- all recommendations must be consistent with 'sound metrological practices'; and
- all recommendations must not contravene any international requirements nor place Canada in breach of any international trade requirements.

1.4 Impact of Recommendations on Other Trade Sector Reviews

Some recommendations contained within this report may impact on other trade sector reviews. The Upstream Petroleum Sector Review recommendations may be reviewed and possibly considered by other trade sector reviews for adoption, however, they will remain applicable only to the Upstream Petroleum Sector.

1.5 Stakeholder Reach

The Upstream Petroleum Sector Review Team made every effort to obtain the participation of a representative group of stakeholders involved in the Upstream petroleum industry.

Representation from the sector included major petroleum producers, independent petroleum producers, petroleum associations, petroleum device repair/service agencies, and other provincial and national regulatory bodies.

1.6 Conclusion, Thanks

The Upstream Petroleum Sector Review Team would like to express their sincere thanks and appreciation to all participating stakeholders. The exchange of information and dialogue throughout the consultation process was always done in a courteous and professional manner and the sector as a whole was very supportive. The team believes that it has met the project obligations by using consultation to achieve the principal goal of determining an appropriate level of intervention for Measurement Canada in the Upstream Petroleum Sector. Should any clarifications be required on this report, the members of the Upstream Petroleum Sector Review Team are available to provide assistance.

The team would like to thank Measurement Canada's staff, managers and Senior Management Committee for the support and input received during the project. The team would also like to thank Sonia Roussy and Gilles Vinet, the sector review team stewards for their patience, support and guidance throughout this project.

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2.0 Recommendations

The following two recommendations are based on consultations with the upstream petroleum industry, mainly the Canadian Association of Petroleum Producers and the Industry Measurement Group, as well as information acquired through the consultations conducted by the Downstream Petroleum Trade Sector Review and the Natural Gas Trade Sector Review in areas similar to the Upstream Petroleum Sector.

2.1 Recommendation #1

No Measurement Canada intervention required for the approval, initial inspection and periodic inspection of measuring devices that are used in trade transactions for the measurement of unrefined (crude) petroleum products.

Current:

Currently Measurement Canada's involvement in the Upstream Petroleum Sector is limited to the inspection of a few devices, mainly truck scales used to weigh unrefined petroleum (crude oil) which is put into oil batteries for processing. Measurement Canada is not involved in the testing of other devices used to measure unrefined petroleum (crude oil) or the other ancillary equipment involved in the measurement process. Measurement Canada is also not involved in the gauging or strapping of vessels for the sale of bulk unrefined petroleum (crude oil). Several of the devices used in the Upstream Petroleum Sector have not been approved for use in trade. Measurement Canada has not taken any enforcement action in the sector to bring these devices in compliance with Measurement Canada requirements.

Rational:

Although Measurement Canada has not been highly involved in the Upstream Petroleum Sector, there are several other measurement controls in place. Most companies involved in the sector have the resources and expertise to ensure accurate measurement. High volumes of product produced make this paramount to the stakeholders involved. Most transactions are based on contracts between stakeholders and have measurement controls included. Transactions are also regulated by provincial bodies to ensure proper royalty amounts are paid based on the volumes produced.

Considerations:

Measurement Canada legislation still applies to this sector and as such, most devices are in non-compliance. The tolerances used in this sector and the inspection frequency is such that additional Measurement Canada intervention would not provide any value to the current transactions taking place.

2.2 Recommendation #2

a) Measurement Canada should provide for the adoption of legislation to formally require that all physical working standards used for the calibration and/or certification of trade devices and ancillary instruments be accepted, calibrated, and certified by Measurement Canada at required intervals.

b) Measurement Canada should provide for the adoption of legislation to formally require that all physical reference standards that are used for the calibration and/or certification of physical working standards be accepted, calibrated, and certified by Measurement Canada at required intervals.

Current:

Currently the calibration and certification of physical working standards and physical reference standards in the Upstream Petroleum Sector by Measurement Canada is inconsistent. Most physical working standards and physical reference standards in the sector that are calibrated and certified by Measurement Canada are also used in other sectors where Measurement Canada calibration is required.

Considerations:

Large trade transactions take place in the Upstream Petroleum Sector on a daily basis. Although the sector has the capability to ensure accurate measurement, the sector still needs access to physical standards that have national traceability to maintain a level playing field. Measurement Canada should provide standards calibrations for the sector.

Physical working standards that are fixed on location may be difficult for Measurement Canada to calibrate and certify (i.e. off shore platforms). Some physical working standards may be of a type that Measurement Canada has not had experience calibrating them.

The stakeholders involved in the upper portion of the Natural Gas Sector recommended that no Measurement Canada intervention was required. Stakeholders from the Upstream Petroleum Sector believed that the devices and the transactions in the upper portion of the Downstream Petroleum Sector more closely resembled the Upstream Petroleum Sector and in some cases the same device was used in both sectors.

Two similar recommendations to recommendation #2 were made during the Downstream Petroleum Trade Sector Review. At that time, Measurement Canada determined that the *Weights and Measures Act* would need to be modified to implement these types of recommendations. Under the present Act, Measurement Canada cannot require certification of physical standards used exclusively to calibrate meters. The legislative requirement applies only to physical standards used to perform inspections on behalf of Measurement Canada.

Measurement Canada is conducting reviews in several sectors and the resultant recommendations could potentially lead to other required modifications to the *Weights and Measures Act*. Consequently, Measurement Canada has decided not to pursue changes to the Act prior to 2006. Amending an Act is a lengthy process and this approach will allow Measurement Canada to incorporate recommendations resulting from several sector reviews at the same time.

As 2006 approaches, Measurement Canada will be contacting stakeholders involved in transactions where pipeline meters are used to measure products to confirm their continued support for these types of recommendations. In the interim, while Measurement Canada encourages the use of certified and traceable standards by all service providers, no program nor regulation will be introduced requiring organizations performing service work outside of Measurement Canada's recognition programs to use certified standards. Meter owners employing service providers not recognized by Measurement Canada to perform regular maintenance of their meters, may wish to include a condition in their service contract requiring these organizations to use certified and traceable standards.

Appendix A

Stakeholders Contacted

Alberta Energy and Utilities Board

Anadarko Canada Co.

Atlantic Petroleum

Barton Instruments Systems Ltd.

BC Oil and Gas Commission

Canada Newfoundland Offshore Petroleum Board

Canadian Associations of Petroleum Producers

Canadian Natural Resources Ltd.

Canadian Superior Energy Inc.

CanAlta Controls Ltd.

Canaport Ltd.

Canship Penney Ugland

CB Engineeting

Central Alberta Midstream

Chevron Canada Resources Ltd.

Conoco Phillips Canada Ltd.

CS Automation

Daniel Industries Inc.

Devon Canada Co.

Devon Energy Co.

Department of Mines and Energy Newfoundland and Labrador

Department of Natural Resources and Energy New Brunswick

EI Paso Energy Co.

EnCana Co.

Exxon Mobil Canada

Fas Gas Oil Ltd.

G & G Metering Services Ltd.

Gibson Energy Ltd.

GS Hitech Controls Inc.

Husky Oil Marketing Company

Imperial Oil Ltd.

IMTT Newfoundland Ltd.

Indian Oil and Gas Canada

Irving Oil Ltd.

Kenonic Controls Ltd.

Kerr-McGee Oil & Gas Co.

Keyspan Energy Canada Inc.

LTS Sales Ltd.

National Energy Board

Natural Resources Canada

North Atlantic Refinery Ltd.

NRForce Resource Management Ltd.

Oil Water Cut Data

Ontario Ministry of Natural Resources

Ontario Petroleum Institute Inc.

Peacock Inc.

Pembina Controls

Preceptive Resources Management Ltd.

Petro Canada Oil and Gas Ltd.

PGI International

Province of PEI, Development and Technology, Energy and Minerals

Quantum Control Services Ltd.

Quarum Business Solutions

Samson Canada Ltd.

Saybolt Canada Ltd.

SGS Canada Inc.

Shell Canada Products Ltd.

Small Explorers and Producers Association of Canada

Sparton Co.

Statia Terminals Canada Inc.

Suncor Energy Ltd.

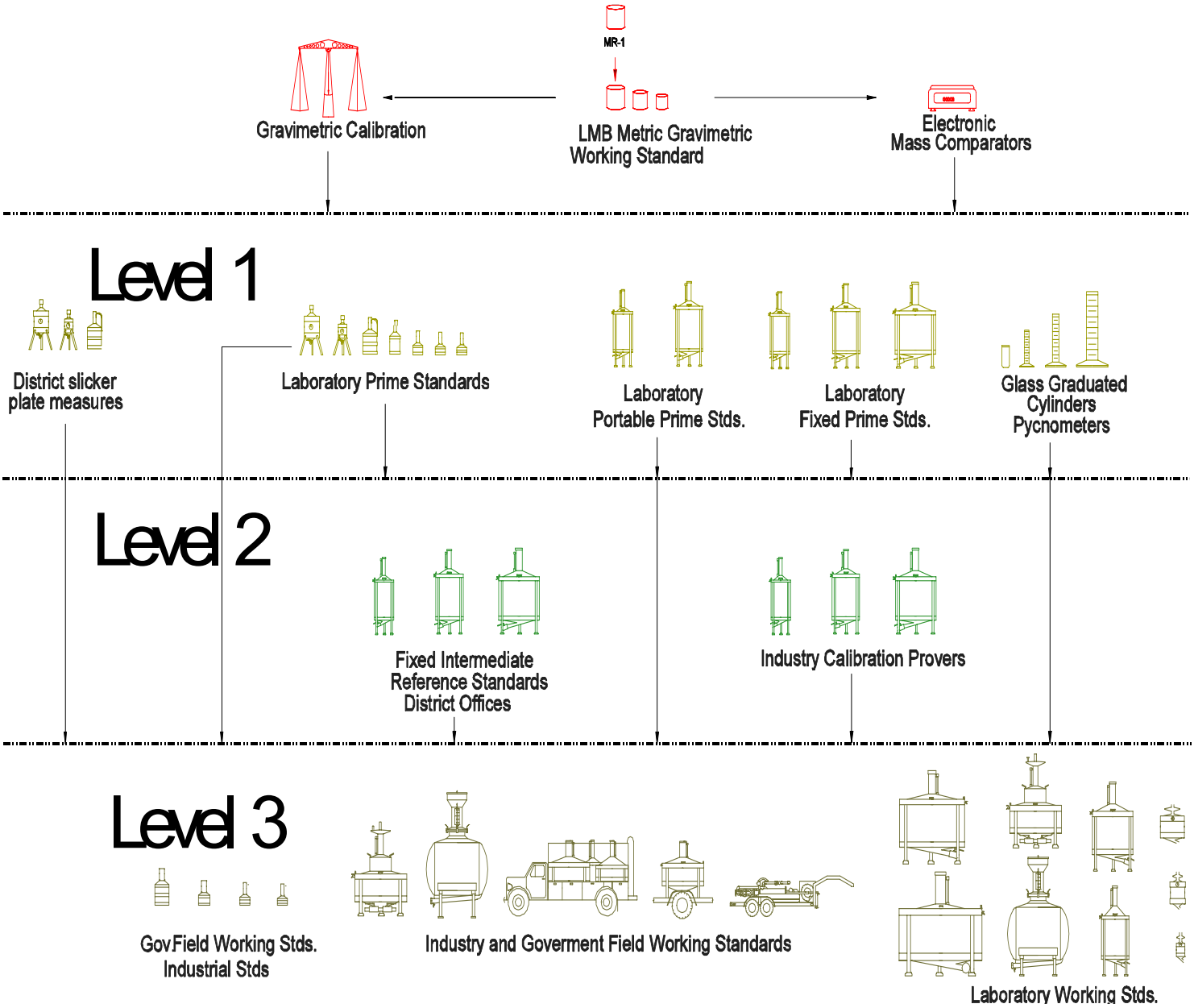
Talisman Energy Inc.

Total Production Services Inc.

Trans Canada Pipelines Ltd.

Wyoming Meter Proving Service

Appendix B


MR-1
Gravimetric Calibration
LMB Metric Gravimetric
Working Standard
Electronic
Mass Comparators
Level 1
District slicker
plate measures
Laboratory Prime Standards
Laboratory
Portable Prime Stds.
Laboratory
Fixed Prime Stds.
Glass Graduated
Cylinders
Pycnometers
Level 2
Fixed Intermediate
Reference Standards
District Offices
Industry Calibration Provers
Level 3
Gov Field Working Stds.
Industrial Stds
Industry and Goverment Field Working Standards
Laboratory Working Stds.